Issue 81 • 26 May 1990 • 58p

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NEW COMPUTER EXPRESS

BRITAIN'S BIGGEST SELLING COMPUTER WEEKLY

AMIGA

- ST emulator arrives
- Rotox reviewed
- Stateside update

ST

- Clever selector
- Patch librarian
- Photon Storm review

PC

- Budget multimedia
- Stunning sampler
- Ex-military marvels

CPC

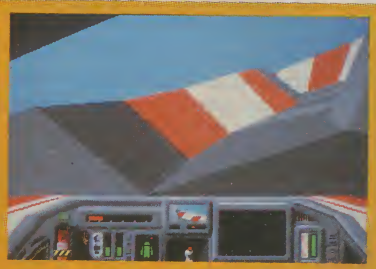
- Sim City on the way
- Cyberball is here

SAM COUPÉ

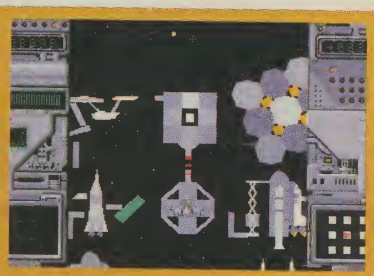
- First strategy game

Specialist Columns for: ARC•BBC•C64•MSX•PCW PD•QL•SPECTRUM•XE

Photon Storm: another ST hit for Jeff Minter? – page 16



Powerdrome: pretty on PC, but hard enough? – page 12



Rotox: Amiga shoot-'em-up for hard thinkers? – page 14

LOW END MAC ON THE WAY

£800 entry-level Macintosh stuns micro market

•New machine will look like the SE.

Details leak out – page 3 • Comment – page 7

BARGAINS! Thousands to be found in SHOPPING EXPRESS

JUST HOW SAFE ARE YOUR SECRETS? page 56
Express challenges data protection registrar

ARE YOU READY TO ROCK AND ROLL? page 53
Unmissable no-frills guide to making music

0770957094004 21

CONTENTS

FEATURES

MERRY MELODIES 53
At last the music series gets to the point – how do you go about creating tunes with a computer?

KNOW YOUR DATA RIGHTS 56
We talk to Eric Howe, the man in charge of the Data Protection Act

REGULARS

NEWS 2
Hot from the presses

COMMENT/ARCHIVE 7
From past to present

THE PD COLUMN 44
Public domain survey

COMPETITION 50
Win a PC mouse

COMPUTER CHAOS 50
Micros wreak havoc

TECH TIPS 58
The manual from Uncle

LETTERS 60
Soap box city

SHOPPING EXPRESS

BUYERS' GUIDE 19
Essential PC software

READER ADS 34

EXPRESS JOBS 38

EXPRESS SALES 40

FREE ADS FORM 43

YOUR MACHINE

AMSTRAD CPC 9
BBC MICRO 9
SPECTRUM 10
SAM COUPE 10
AMSTRAD PCW 10
MSX 10
COMMODORE 64 11
SINCLAIR QL 11
ATARI XE 11
ARCHIMEDES 11
PC COMPATIBLES 12
AMIGA 14
ATARI ST 16

Home model will interface with domestic appliances

IBM TO BUY-IN HOME MICRO FROM JAPAN

Despite speculation aired in the trade press that IBM is planning to badge a version of Fujitsu's FM Towns, industry sources have revealed to *Express* that Big Blue's second stab at the consumer market, dubbed the PC Junior Mark II, will in fact incorporate Matsushita technology.

Computer Trade Weekly (*CTW*), a leading trade magazine, quotes sources 'working within the burgeoning CD field' as suggesting the secret IBM project will use a 386 processor, internal CD-ROM drive and 1Mb of RAM – an identical tech-spec to the FM Towns.

While sceptics may assert that IBM is the last company in the world to badge another manufacturer's hardware, this is not the case – all of IBM's PS/2 machines are actually badged models! However, far from lending credibility to *CTW*'s story, this fact points strongly to IBM teaming up with a different, and even larger, Japanese competitor.

• FM Towns: trade speculation that IBM will badge it in the West.

Matsushita, which owns Panasonic, has had a long history of co-operation with IBM.

Panasonic robots build all IBM's PS/2 computers at factories in Japan and Chicago, and both the IBM P70 portable and IBM CD-ROM drives are badged, wholly Panasonic machines. Furthermore, *Express* has learnt that IBM signed a secret 'non-aggression pact' with Matsushita in 1986 for joint BIOS and hardware development.

Rumours that the new machine is to be launched at the Las Vegas CES next January must also be taken with a pinch of salt, since the technology it will use is unlikely to be fully implemented by then. The key to the timing of the new IBM is the 'Domestic Digital Bus' communications platform currently under development by Matsushita and Philips.

Known to insiders as DB2, this standard will allow all Panasonic and Philips electronic equipment to be linked to any personal computer with the requisite interface. DB2 will enable TVs, video players, hi-fi, CD-ROM players and cassette decks – even devices such as microwaves, cookers and coffee-makers – to be linked and controlled via a computer.

Such a configuration is known to be close to IBM's vision of multimedia, and its new machine is already being prototyped with DB2 fitted as standard. ■

Top US university to study video games for Nintendo

Console king Nintendo is giving $3m to the Massachusetts Institute of Technology (MIT) for studies into how children can learn from video games.

Although there is no obligation for MIT to develop games for Nintendo, the Japanese company is hoping that Media Lab Research will create ideas that may turn into profit-making game cartridges – whether instructional or not.

MIT learning specialist Seymour Papert, better known for his work in the development of the computer language Logo, said: "You have to work from within the culture as it is and Nintendo is part of the culture."

Meanwhile Nintendo has signed licence agreements with 30 major game software companies in order to develop software for Super Famicon – the 16-bit version of the already popular 8-bit Famicon – due out in this autumn.

According to a Japanese newspaper, companies approached include Konami, Enix and Sapporo-based Hudson – which developed software for the 16-bit PC Engine produced by NEC.

Nintendo itself is also offering software, including *Super Mario Brothers* 4, to coincide with the Super Famicon release, with the latest version of *Legend of Zelda* due out in next spring.

A spokesman for Nintendo would not comment beyond insisting that sales of Super Famicon would be limited to Japan for the time being. ■

Chip talks like Kylie *and* Jase

A voice synthesis chip has been developed in Sydney which will allow computers to talk with an Australian accent – so that the antipodeans will feel more at home with electronic voice systems.

Described as "a truly generic voice synthesis chip", it is the world's first multi-channel chip for speech synthesis and, with the proper software, should be able to talk in any language, with any accent, and sound either male or female.

The research was carried out by Dr Clive Summerfield of Sydney University, who has formed Syrinx Speech Systems to continue the research under an agreement with Australia's international carrier, OTC.

Australians apparently find foreign accents 'metallic', so linguistic experts are developing a model of an Australian accent so that – to Australians at least – the chip will sound more natural. ■

CURVACEOUS GAMES

The Sales Curve has announced a series of tasty-looking games which should arrive between the autumn and early 1991.

There is *Big Run*, a rallying/car racing game, a shoot-'em-up called *Saint Dragon* and a ladders and platforms game called *Rod Land*.

Saint Dragon, left, should be with us in the autumn and the rest are expected to follow soon afterwards on all formats except PC.

Absolute beginners

A beginner's tour of the IBM PC has been launched on disk by Systame.

All you need to know to use *How to operate a computer* is where the disk drive is. From then on, the program loads and gently takes you on a guided tour of the PC.

The program aims to produce a user who understands the computer's function.

The price is £35.65 including shipping. More on 0342 312084.

£800 Macintosh will put the pressure on Commodore and Atari

APPLE ATTACKS THE HOME MARKET WITH CHEAP MAC

Apple will release a low-cost, low-end Macintosh retailing at under $1,000 in time for Christmas.

Speaking at a recent worldwide developers conference in San Jose, Apple's Chief Executive, John Sculley, also announced that the company is working on several new Mac models expected to sell for less than $2,000.

The new entry-level Mac, dubbed the SE/2 by some sources, has been under development for over a year and will feature a built-in 9-inch monochrome screen, twin PC-compatible floppy drives – probably with a hard disk option – and 1Mb of memory.

The model will be a new version of the existing SE, but with a much reduced number of chips made possible by VLSI (very large scale integration) technology. Long-standing rumours that that the 'SE/2' will have its operating system on ROM have yet to be confirmed. Sources say the machine will feature an Apple II emulator, although this is more relevant to buyers in the US where the Apple II is still going strong.

DEATH-KNELL

With a price point rumoured to be around the $800 mark, the new machine effectively sounds the death-knell for the current low-end Plus and SE models. Something around a pound-for-dollar price is expected when the machine reaches Britain.

A new low-cost modular Mac, priced at under $2,000 and using the video chip first used in the Mac IIci, will offer colour capability and a powerful 68020-based processor.

At these prices, both machines are unlikely to incorporate Apple's delayed System 7 – the operating system upgrade viewed as the range's most important single development as it allows multi-tasking – although it is expected this will be available as an option.

In addition, Sculley told developers that all future modular Macs would incorporate 'audio I/O', allowing users to input commands via microphone. *HyperCard 2* was also officially launched at the conference, and supports both colour and multiple windows scalable up to 1,280 x 1,280 pixels.

The new models are an indication of Apple's current corporate thinking, which holds that the way forward for the company is to rapidly increase the number of Macintoshes sold into the market by cutting both retail prices and Apple's own profit margins.

In line with this philosophy is the company's announcement last week that it will increase the discount available to US schools on both Plus and SE models to a staggering 66 per cent. ■

An even cheaper option

Meanwhile, a Yorkshire-based company, MacSolutions, has announced a 1Mb Macintosh with 12-inch screen, single 400K floppy drive, keyboard, mouse, *MacWrite* and *MacPaint* for only £250.

The Apple Mac XL, specifically intended for data and text entry, can be upgraded to run the latest System 6 operating system software, but currently runs an older version. However, text or data can be transferred to more recent models for inclusion in DTP and databases.

• The £250 Mac XL

The machines are upgraded Apple Lisas, the product which predated the Mac.

Contact MacSolutions on 0274 394636. ■

Affordable at last

***Express* readers (and indeed staff) have often complained that, while the Macintosh is a very attractive machine, Apple's pricing system had made it all but unaffordable as a home computer.**

It could be argued that the new entry-level machine will not change this at a stroke, because the cost of commercially produced Macintosh software will remain almost prohibitively expensive.

However, aside from the PC, the Mac has more PD and shareware available for it than any other range. Moreover, the quality of much of this material is superb, and there are good, cheap word processors, spreadsheets and other 'standard' software products for the machine.

Potential purchasers replacing existing computers will also be pleased to know that Macs can be used in conjunction with most third-party printers (because of the many drivers available as PD or shareware) and some SCSI hard disks. ■

Infocom closes

Infocom, once *the* American adventure games label, has been closed down with losses of $9 million.

The company, best known for *Battletech* and *Zork*, was bought in 1986 by American publisher Mediagenic, but never made a profit for its new owners.

Larry Sparks, marketing manager of Activision, which is also part of the Mediagenic stable and the company now responsible for the Infocom label, explained: "Mediagenic, like any big corporation, is taking a close look at profitability throughout the group. Closing down the non-profit making areas and concentrating on the profitable ones clearly makes sense.

"Activision is part of the UK/European operation and that is always profitable. Infocom will still exist as a label and as far as the games buying public is concerned there will be no change."

PC-owning Infocom fans can still look forward to the release (any day now) of *Circuit's Edge*, which is based on the cyberpunk world and will cost £29.99. A version will be developed later for the ST but not, apparently, for the Amiga. ■

If a double-decker bus...

A British company is offering to make to measure laptops that you can drive a bus over, should you feel like it, and still use afterwards, *writes Keith Pomfret.*

The firm's new 386 laptop from GRiD is also claimed to be immune from electronic eavesdropping. The GRiDCASE 1537 Tempest is designed to NATO specification for security and electromagnetic leakage.

It is described as suitable for any application, military or civilian, where security is important.

The internal 40Mb hard drive is supported by a high density 1.44Mb floppy and can be removed from the computer and locked in a safe place. It runs from batteries and a wide range of other power supplies.

While the American computer industry can only promise notepad computers that use a pen and pad rather than a QWERTY keyboard, GRiD announced quite casually that it didn't know what all the fuss was about. It had been shipping a notebook computer since last year, and it even runs standard MS-DOS!

• The GRiDCASE can be run over by a bus and still work. Watch out for a wheels-on review soon.

Get more information on the GRiDCASE and the notepad PC from GRiD Computer Systems on 0372 60266. ■

On the move with mini modems

A range of battery-operated portable modems the size of cigarette packets will allow unhindered communications on the move according to manufacturer, Dataflex.

The 2,400-baud range starts at £299, and includes a fax-compatible model. More from Dataflex on 081-543 6417. ■

Upgrade to MS-DOS here by Christmas

A new version of MS-DOS for the PC, DOS 5, will be available by the end of the year.

For the first time, this new version will work in ROM and so will use less of the 640K memory ration. In addition, DOS 5 will feature new utilities, and a disk organiser. It is also hinted that 286 and 386 users may be able to get around MS-DOS's 640K memory limit.

Microsoft is known to have DOS 5 already up and running in ROM form with leading developers, and it has been carefully vetted to be downwardly compatible with all existing applications. A Microsoft spokesman claimed that with DOS 5, MS-DOS would become a complete and stable environment – which is just as well since replacing a ROM-based system wouldn't just be a matter of buying a new floppy upgrade. ■

Computerised ID tag wards off the babynappers

• The baby tag offers extra security to hospitals against babynappers.

A computerised baby-tagging system will save parents the heartache of hospital babynapping. An electronic tag will alert a computer monitored by staff if a baby is taken out of the ward.

The matchbox-sized tag is attached to the baby by a strap made from the same material as a bullet proof vest. It is claimed to be impossible to cut off by the manufacturer, Eureka Systems.

The tag can be programmed with the baby's personal data, and if the baby is removed from the ward, a computer screen tells nursing staff which baby is being taken and through which exit.

St Thomas Hospital, which hit the news when Alexandra Griffiths was kidnapped earlier this year, is among the first to order the £26,000 system.

• Babynapping is a thriving business in the US with hundreds of babies stolen for re-sale every year.The cost of a black market baby in the US is about £18,000.

• Beats International: on show at the show.

Just be good ST

Beats International, the band formed by former Housemartin Norman Cooke, will be showing their faces at Atari '90.

Also attending the show will be Captain Sensible and the Rebel MC. The Atari ST series with its in-built MIDI ports is popular with amateur and professional musicians alike and MIDI is bound to play an important part in the show.

The Atari show is to be held at the Hammersmith Novotel on June 1–3.

A crisper camcorder

The dreadful blur which can lead to frustration when 'digitising' from video could be a thing of the past by Christmas.

JVC has developed a camcorder which analyses incoming signals and holds them in memory. If it senses a jerk or a blur, it inserts signals from the memory to make a smooth picture.

So confident of its success is JVC that it has applied for 316 patents for the camera, and promises to ship it in the UK by Christmas. The price is estimated at about £600 in Japan but there are no guesses for the UK price yet.

SAM soccer sim

Masters of Strategy is claiming the first football strategy game for the SAM Coupé with the veteran *Football Director II*. The game will be available from June 5.

Price is £19.95 for cassette or disk. Further information from distributor D&H on 0462 816103.

Japanese launch for Sony's latest miracle machine

POCKET CD BOOKS IN THE SHOPS THIS YEAR

Sony is developing an electronic book system that will put the equivalent of 300 paperbacks into the palm of your hand.

Called Data Discman, the system records up to 100,000 pages on a 3-inch CD, and plays the text back on a hand-held player with a pop-up screen. It weighs about a pound – less than many text books – and can display 10 lines of 15 characters each. The reader can adjust the scrolling rate to match his or her reading speed.

The head of Sony's General Audio Group, Sunobu Horigome, explained: "The purpose of this product is to create an entirely new market. Instead of having to go to a library or a bookshelf for information, people can have access to it any time and anywhere."

He hoped that this would create a "new culture" and a new approach to information access, with an impact comparable to that achieved by the Sony Walkman.

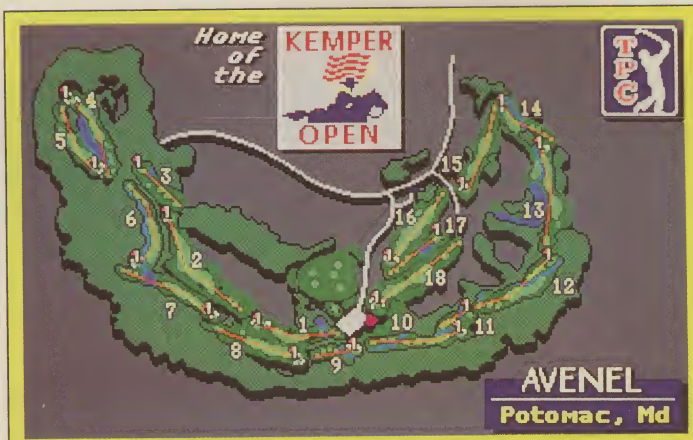
Sony officials intend to launch on their home market on July 1, with players costing around £230. The total Japanese market for information CDs – including CD books – is expected to reach £1.56 billion by 1992.

Sales outside Japan will begin within the year, once appropriate deals have been struck with local publishers.

Data Discman comes with a free Japanese–English dictionary and can be connected to a normal TV screen for a more readable display. There is an audio CD option which comes with an earphone.

Twenty-eight Japanese publishing companies have joined forces to form an electronic book committee to work with Sony on developing the new format. Some 20 electronic books will be released at the same time, costing between £12 and £20, and including guides to medicine, movies, travel and entertainment.

Sony is also intending to license the system to other companies wishing to produce electronic books and players.



• Top-quality PC graphics explain the holes in PGA Tour Golf. Below: choose your opponent from a list of 60 professional golfers.

Do a round with the professionals

Electronic Arts has announced *PGA Tour Golf*, a PC golf game with the endorsement of the US Professional Golfers' Association.

Up to four players can take on 60 PGA pros and play a competitive game on one of four courses.

The game puts the emphasis on professional decision making, with true skill the only escape from certain hazards. Not one for the pitch-and-putt golfer, but it should be a real challenge for the enthusiast.

It will be out next month for £24.99.

Budget PC sampler

PC-Replay is a sound sampler and MIDI interface which combines all the usual sampling facilities with a unique ability to utilise the hard drive of a PC as 'virtual memory'.

Samples up to 3Mb long can be edited directly from the hard disk, as well as shorter ones in memory.

PC-Replay will run on any PC compatible with 512K RAM, a spare half card expansion slot and EGA or VGA graphics. Mouse control is optional, but it is recommended. Any PC mouse may be used.

The best news of all is the price – £149.95. More info from Audioview on 0582 457348.

Panasonic's flexible friend

Credit-card sized memory cards are now available from Panasonic offering high speed access, resistance to static electricity, the strength to resist bending forces of up to 20kg, low power consumption and long-life memory backup.

With wide applications in automation, communications, health monitoring and education, the cards are available in several formats including static RAM and EPROM, with storage capacities from 8K up to 1Mb.

More information from Panasonic on 0344 853259.

Low-cost multimedia

A new board from VideoLogic provides the cheapest way in to multimedia on the PC.

The IVA-2000 board, which offers EGA overlay, transparent colours, and video, audio and graphics fades, was originally priced at £560 – but will now be available from VideoLogic dealers for just £270.

The company's marketing director, Trevor Wing, explained: "By lowering the cost of the board, markets such as education can take advantage of, and really benefit from, cost-effective multimedia solutions."

More information on the IVA-2000 on 0923 260511.

Australian report slams computers' reliability

COMPUTERS 'UNSAFE' FOR CRITICAL TASKS

An Australian report says that computers are too complex and aren't reliable enough to perform life-critical tasks.

It lists monitoring nuclear plants and controlling air traffic as two of the jobs that computers are too unreliable to do safely.

Computers are unreliable, prone to catastrophic failure, and cannot be thoroughly tested before use, say scientists Tom Forester and Perry Morrison, authors of the report.

They have studied computer failures over the last 20 years and cite 36 examples in which they claim computer malfunction has killed people or caused major damage. In another part of the report they claim that Los Angeles Air Traffic control had 104 failures in one day in July 1989.

Life critical systems manufacturers should be licenced, they maintain, and should guarantee their products, but few in reality do.

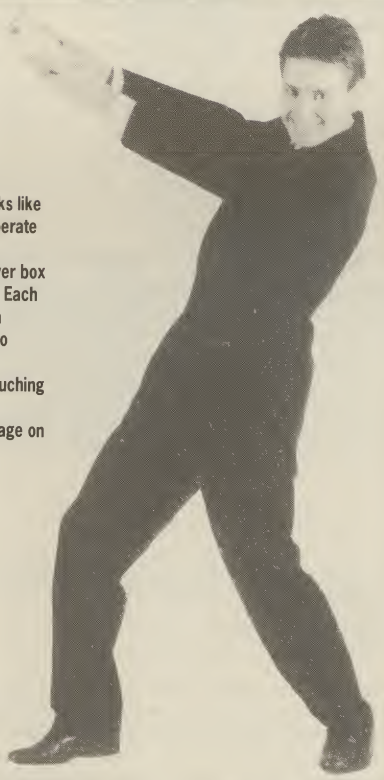
Express contacted Ken White, manager of the UK's newest nuclear power station at Heysham, and put the report's claims to him.

His reaction to the claim that it was impossible to test systems before they are put into use was simple: "Baloney, and I don't think I need say anything more than that."

He believes that while any computer system can be let down by its component parts, duplicating systems in life-critical tasks can bypass faults and allow them to be fixed.

Said White: "We have redundancy in the system and are thus able to cope with hardware failure by using back-up systems. Without computer systems the probability is that we couldn't operate as safely as we do."

WAVE THE MAGIC WAND



The Wand is an infra-red device that looks like a TV remote control but allows you to operate the computer from a distance.

The Wand sends signals to a receiver box that connects to the serial port of a PC. Each of the Wand's 20 keys can be assigned a macro of up to 80 characters. The macro facility makes it possible to make presentations without the necessity of touching the PC.

The Wand is available from Soft Image on 071-636 3353 and costs £249.

• Soft Image's latest accessory allows you to make a complete prat of yourself in public.

Archie the on-line doctor

Body scanners are invaluable diagnostic tools – but in an emergency you need a medical expert on hand to interpret the images.

Now the doctor or consultant can provide an instant diagnosis from miles away by using an Acorn Archimedes linked to the scanner via a standard telephone line.

The Archimedes is connected to a Siemens computed tomography (CT) body scanner using high speed data transmission software produced by Simis, which produces a high-definition monochrome image.

Keith Phillips, computed tomography service manager at Siemens, explained why the Archie was chosen: "The Archimedes 400 series is the only machine that offers high-speed image processing capabilities, ease of use and the flexibility for further hardware and software enhancements, all at a cost that will allow the addition of multiple remote stations."

Cheap at half the price

Supercomputer giant Cray has announced a 'budget' addition to its Y/MP range. The Y/MP2E costs from $2 million and is available with air or water cooling.

Other models in the budget range cost up to $5 million, and all are fully compatible with the existing Y/MP range. Cray will begin shipping in April 1991.

Glasgow festival takes in computer art

The Art Machine, part of the Glasgow 1990 festivities is an exhibition designed to celebrate the human imagination – and capture the imagination of children. And since children are presumed to be computer literate these days, the organiser, Triangle Projects, has used a variety of innovative computer applications.

Leapfrogs, a group of educators, has created a range of applications from simple pattern manipulation to highly sophisticated animation programs – including *Design your own tree*.

Central TV's education department has provided The Vision Tube. Described as a small, rainbow coloured gasometer, it uses a keyboard to change patterns of colours on the surface of the tube.

Other exhibits include composer Ron Geesin's Tune Tube which is a huge musical instrument, played from inside by a person's body breaking laser beams.

The show runs from June 2 to August 26 at the McLellan Galleries, Sauchiehall Street, Glasgow and is open 10am–5pm Monday to Saturday, with late opening to 10pm on Thursdays, and 12 noon–6pm on Sundays. Call 0353 699640 for more details.

Chemistry teachers challenged

The first games-playing chemistry teacher to complete 20 levels of *Atomix* will win the school an Amiga from the game's publisher Grandslam.

As well as the prize for the school, there's £100 up for grabs for the first games player to nominate a joystick waggling teacher.

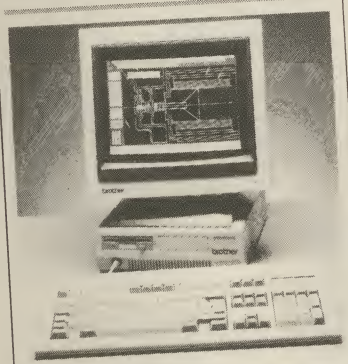
The Amiga goes to the school of the first teacher to complete 20 of the game's 30 levels and have the score confirmed by their head teacher in writing to Grandslam.

Atomix is described by the company as an addictive puzzle in which the player constructs molecules from atoms found in a maze. By the time the 30 levels are mastered, Grandslam claims that players will know the structures of at least 39 molecules including propane, ethanol and methanol.

Duncan Lowthian at Grandslam said: "We've got the chemistry right and I hope we'll catch the public imagination."

Head teachers note: The address for confirmatory letters is Grandslam, 56 Leslie Park Road, Croydon CRO 6TP and the letter must be on official notepaper.

Atomix is out this month and will be available on Amiga, ST and PC. Eight-bit versions will follow. ■



• L'il 'un from Brother.

Little Brother

Brother has launched a series of slimline desktop 286, 386 and shortly 486 PCs.

The range starts with an entry-level 286-based 1Mb machine and will be available in various configurations up to a fully featured 486 system. Prices start at around £1,100 for a mono machine and £1,400 for a VGA colour version.

More details on the range and prices from Brother on 061-330 6531. ■

IT training show

The 1990 Computer Training and Services Show, the UK's leading IT training exhibition, will be held at Olympia between May 30 and June 1. The show covers training as well as areas like personal skills and consultancy. Further information from 071-242 4141. ■

Scottish crofters get digital technology

People living in remote areas of Scotland could soon be enjoying the same kind of high speed electronic communications as big international corporations – but at a fraction of the previous cost.

This month the Scottish Highlands and Islands Development Board is launching the first part of a £16 million scheme offering users the chance to deal directly with big UK and European commercial centres.

Eventually the project will provide homes and special village centres with fast, high-quality digital communications facilities for voice, computer data and image traffic.

Computer links will be made available between the region and the rest of the UK for the cost of a local telephone call. Spokesman and telecommunications consultant for the HIDB, John Lough, explained that people working at home – 'electronic crofters' – can exchange information with an employer in London as cheaply as phoning from a London suburb.

Forty exchanges in the Highlands and Islands region are being converted from analogue to digital to provide the first operational Integrated Services Digital Network which, from August, will charge 3p a minute to send computer information anywhere in the country.

It is hoped that the project will create at least 500 new jobs over the next year. ■

Two arrested for exporting machine to Bulgaria

TOP SUPERCOMPUTER SEIZED HEADING EAST

US customs agents have seized what they believe to be the second most powerful computer in the world as it was due for illegal export to Bulgaria.

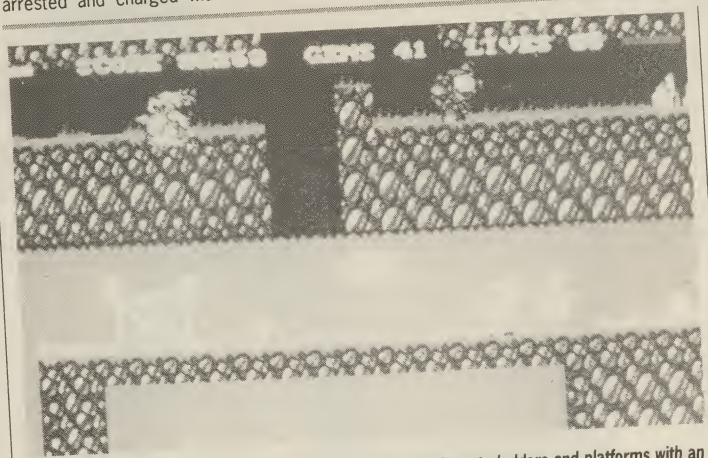
The Control Data ETA 10 supercomputer was found in a 48-foot trailer in South Carolina ostensibly awaiting shipment to France for delivery to Bulgaria.

Two senior computer executives, operating from their homes, were arrested and charged with violating the US Export Administration Act, punishable by up to 10 years in prison and $1 million in fines.

The $6 million computer was due to be sold for only $1 million since it was wired for European power systems – thus making it difficult to sell in the United States.

A senior customs official described the power of the computer seized as being sufficient to run a fairly large-sized city. "It could run its entire communication system, its entire phone system networks, etc. Its military applications are vast as well. It could run a radar installation. It could program missile guidance. It could do virtually anything and the damage that could have been done to the United States by this getting to an Eastern Bloc country would just be immeasurable." ■

(Newsbytes)



• The people who brought us Populous have turned their talents to ladders and platforms with an underground game featuring an overweight blob called Quiffy.

In Flood, Quiffy has to rid his underground kingdom of psychotic creatures lurking in the 36 levels, and a plethora of military hardware around the caves provide a colourful and noisy game. It is due from Electronic Arts in June and will run on the ST and Amiga, priced at £24.99. ■

Your conversation is in the oven

Mobile telephones could soon be replaced by microwaves – microwave phones, that is.

An experimental microwave communications net has been given the go-ahead by the Federal Communications Commission in America, and experimental licences have been granted for Houston, Texas, and Orlando, Florida.

Unlike cellular phones, which use traditional radio waves, the new phones use microwaves – although much longer wavelength ones than those found in your average kitchen equipment.

The handsets will be low-cost, wallet-sized and lightweight, and will run on low power using smart-card technology. ■

Classes on the phone

A new educational package from US telecommunications giant AT&T combines the academic curriculum with interactive electronic mail.

The AT&T Learning Network is designed to promote a 'learning circle' between up to nine classrooms via computers attached to the phone network, so that geographical boundaries don't present a problem to the sharing of knowledge.

Subjects as diverse as geography, science, social studies, global issues and creative writing can be included in the on-line curriculum.

As well as schools in the US, AT&T tested the service in the UK, Australia, Canada, France, West Germany and the Netherlands and has about 8,000 students in 300 classrooms involved. AT&T hopes to double this in the coming year. ■

Roam the US on disk

Maps of the US with details so fine that rivers and streams, street addresses and even power lines are shown have been released on CD-ROM by the US Census Bureau.

A sample CD ROM can be obtained from the bureau on 0101 301/763-4100 which makes a charge for the data. ■

COMMENT

As Apple prepares to slash the prices of its entry-level machines and IBM talks of a new PC Junior, it seems the big boys are turning to the home...

While we are all glad that we didn't hold our breath waiting for it, the news leaked from Silicon Valley of something like an affordable entry-level Macintosh is certainly welcome.

Though the Mac is often treated to hoots of derision from The Hard Boys of computing (merely mentioning it has virtually guaranteed another sackful of Express Mail from Yours, Disgusted of Fortran Wells), there is an underlying suspicion that many of the machine's critics secretly resent the fact that it has encouraged virtual computer illiterates to undertake tasks that might otherwise be confined to the arcane realms of Those Who Can Be Bothered To Learn The Hard Way.

The greatest weakness of the Mac is its lack of domestic penetration

That the Macintosh range has brought relatively painless computing in the workplace to those who would probably have found PC DOS environments rather intimidating is to the machines' credit and is their greatest strength.

The greatest weakness of the Mac, though, is surely its lack of domestic penetration. Even in the homes of dedicated office Macintosh users, the little grey box is conspicuous by its absence.

While the Macintosh's price tag can feasibly be justified for any reasonable quantity of work produced from home, as a machine for occasional dabbling and the odd spot of homework the Mac has been unaffordable by all but the most affluent student.

At present even the single-floppy Macintosh Plus – almost useless without the addition of a second drive – comes in at all but £1,000 plus VAT. The double-drive SE, which Apple's imminent launch seems to be a slightly enhanced version of, costs more than £1,700 plus VAT. Clearly, at anything like a pound-for-dollar price the SE/2, expected to be $800 in the US, represents a radical change in pricing policy, cutting the cost of a worthwhile entry-level machine by more than 50 per cent.

An £800 SE is not going to put a Macintosh in every home overnight – indeed, although the US launch is expected in October, no UK date is known as yet – but it will bring that famous WIMP interface down into a price bracket that sees it competing on realistic terms with machines of comparable capabilities.

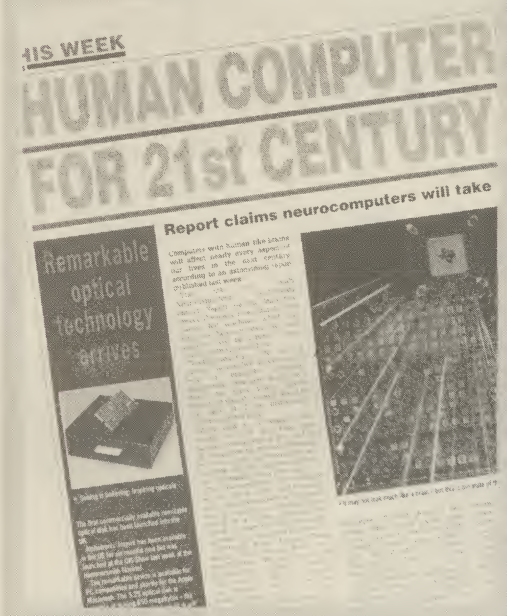
It would, no doubt, be unduly cynical to see Apple's tentative look at the pile 'em high, sell 'em cheap end of the market as in any way connected with IBM's anticipated second attempt at the home micro market, but then harbouring cynical suspicions is part of what journalists are paid for.

The domestic digital bus (see page 2) may go a long way towards explaining Big Blue having bided its time about re-entering this lucrative market. The possibility of phoning home to tell your computer to turn on the oven is at least slightly mind-boggling, and a subject we expect to return to as more information on the development emerges. ■

FROM The ARCHIVE

ONE YEAR AGO

Researchers claimed that computers with human-like brains were on the way and and by the 21st Century would be part of everyday life. The computers were described as neuron-like processors that could learn, see, hear and, above all, make decisions.


THIS WEEK
HUMAN COMPUTER FOR 21st CENTURY
Report claims neurocomputers will take
Remarkable optical technology arrives

The first commercially available rewriteable optical disk was launched in the UK. The £6,000 Alphatronix Inspire used a 5.25-inch optical disk with a capacity of 650Mb and could be attached to PCs and Apple Macintoshes.

Amstrad boss Alan Sugar organised a pro-celebrity tennis tournament to raise money for charity. This was the first time Amstrad had entered sponsorship in its 21-year history. The tournament at the Albert Hall was taken over from the prestigious Harrods.

***Express* bowed to immense pressure from a hard core of dedicated enthusiasts and opened the doors on the Atari 8-bit column in Your Format.**

A dot-matrix printer as quiet as a whisper was announced. The 48dB Trend 7080 was claimed to retain all the features of noisy printing with the special hush mode included. The price of peace and quiet was a steep £835.

Although the PC beat Apple hands down for UK sales, the US reported that Apple had sold 1.27 million Macs and Mac IIs as opposed to IBM's 1.23 million PCs This surprising result was blamed on people's reluctance to take to the IBM PS/2 range.

The PC market suffered in the UK with IBM and Amstrad taking the drop on the chin. Total sales for the first quarter of the year were 115,000, a drop of about 15 per cent according to researcher Wharton Information Systems.

TWO YEARS AGO

IBM flexed its Big Blue muscles and demanded that all clone manufacturers pay royalties dating back to 1982. Payments of one per cent of total sales were demanded but the reaction from clone manufacturers was less than deference. An Amstrad spokesman at Brentwood said: 'We wish them the best of luck as long as they don't come knocking on our door.'

Business software publishers breathed a sigh of relief as a loophole that threatened to put their products in the domain of the lending libraries was gently closed. A problem in clause 63 of the Copyright, Designs and Patents Bill was closed by a statement in another clause that outlawed renting software altogether.

Sources: *New Computer Express*, *Computer Trade Weekly*, *Computer Talk*.

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EDITOR • Martyn Lester
FEATURES EDITOR • Andy Storer
PRODUCTION EDITOR • Stuart Anderton
ART EDITOR • Amanda Cooke
STAFF WRITER • Keith Pomfret
NEWS WRITER • Ian Pemble
DEPUTY PRODUCTION EDITOR • Ben Feinbaum

CONTRIBUTORS:
Rob Ainsley • Jerry Glenwright • Maff Evans
Steve Carey • Simon Williams • Robin Alway
Andrew Brown • Keith Neal • Jason Holborn
Bertram Carrot • Rod Lawton • John Torofex
Pete Gerrard • Mark Higham • Sally Newman

ADVERTISEMENT MANAGER • Mark Salmon
AD EXECUTIVES:
Simon Moss • Helen Kirkhope • Sophie Eades
AD ADMINSTRATION • James Leach
AD PRODUCTION • Frances Wasem
AD TYPESETTING • Terry Turner

ASSISTANT PUBLISHER • Jane Richardson
PUBLISHER • Greg Ingham

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"Some of you may have been thinking of adding the Oceanic disk drive to your C64 system. Some of you may already have done so, but if it was for a brand new drive, then I'll be willing to bet (I seem to have betting on the brain this week) that you paid more than a round £104.95 for it.

That is the price being asked for by Microsnips and included in that sum is postage and packing. The disk drives have alot to recommend them, being smaller, faster and quieter than Commodore's own range of 5.25-inch drives. And, of course, they are cheaper".

(New Computer Express)

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YOUR FORMAT

CPC 9
BBC 9
Spectrum 10
SAM Coupé 10
PCW 10
MSX 10
QL 11
Atari XE 11
Archimedes 11
C64 11
Amiga 14
PC 12
ST 16

CPC

HOT AIR

"I've seen the Future Publishing hot air balloon!" exclaims Nick James of Camerton, near Bath.

"As the balloon gently floated over from Bath towards the village of Camerton it temporarily interrupted my baseball game. A fine balloon if I ever saw one. Congratulations to Future on a wise investment. You will be pleased to know that I went on to win the game 10-4."

I knew it! The Future balloon got its official launch just yesterday, but somebody's been sneaking in a few secret flights. Mind you, I suppose it's difficult keeping something that size a secret! *(That's enough vague innuendo – Ed.)*

HALF-PRICE DISKS!

"I'm just writing to tell you and your readers about my discovery in Boots." writes Matthew Marsden of Chippenham, "I found out that they are selling Maxell 3-inch disks for £1.49, which is about half the retail price for such things. I don't know if any other branches of Boots are selling them for this price, but the branch I visited is in Slough High Street."

Thanks for that, Matthew. Anyone remember the cheap CPC monitors at some Dixons branches a little while ago? It's probably the same thing – individual managers selling off stocks cheap. You know what to do, then, don't you? If you're on the lookout for some disks, take yourselves down to your local Boots on the off-chance.

FUNNY OLD GAME

Well, it's a funny new game, actually. Domark's *Cyberball* is here at last, and it's like an American football sim gone berserk. If you already thought that American football was just about the most violent contact sport the world's most fevered imaginations could concoct, be prepared for a shock. *Cyberball* is to American football what ice hockey is to Torville and Dean.

In *Cyberball*, machines have replaced human players by a process of evolution rather than by a straight swap. You see, coaches worked out that when their human players lost kneecaps, twisted ligaments, broke collarbones and the rest, they played a lot better afterwards if these rather feeble organic bits and pieces were replaced by altogether less feeble mechanical ones. Before long just about every player sprouted enough hardware to make the Six Million Dollar Man look like a six dollar turkey.

Of course, things got so violent then that some of the players were actually getting knocked off during a game – usually by others that had so many mechanical transplants that the last bit that was actually human was now in a pickle jar on the coach's mantlepiece.

So it made sense to forget about human players altogether, and let the pure machines fight it out.

And fight it out they do. *Cyberball* features the same strategy, tactics and gameplan as American football – but with the added feature of total mechanical mayhem. You control 14 machines in all – 7 on offence and 7 on defence – and each machine has its own special qualities, which include speed, durability and ferocity.

Oh, and there is one other difference – the ball has been replaced by a 350lb bomb. Just thought I'd mention that. If you don't get the bomb to your opponent's touchline before time runs out, it goes up in a big way. Just as well, then, that you get the chance to rebuild your robots at the end of each match.

If all this makes it sound as if *Cyberball* is simply yet another robotic bloodbath (oilbath?), then you're in for a surprise. *Cyberball* is in fact an extremely complex tactical game. You must plan each move carefully, always trying to outwit your opponent rather than steamrollering through with sheer force. And with 14 players on the pitch, that means a lot of planning. For that reason the graphics are functional, featuring an overhead view rather than an arcade-style behind-the-player romp.

There are only six teams, but enough rules and enough strategy in *Cyberball* to keep you going for a long, long time. And the price? £9.99 on cassette, £14.99 on disk.

TOWN PLANNING

Sim City is a rather curious title for a game – and it's a rather curious game. Already out on the 16-bits, it gives you the job of building a city from scratch. It's not just a case of throwing up a few housing estates, a row of shops and a pub, though.

No, a successful city relies on a whole range of interrelating factors. Do you spend next year's budget on roads or schools? Do you need a hospital first or a railway station? As mayor of an imaginary city you must balance all these decisions wisely if you're to construct a successful and prosperous city.

Infogrames is the company behind the game, and it's working on the CPC conversion now. And if the 16-bit versions are anything to go by it should be good. Weird, but good.

Rod Lawton

IKARI WARRIORS POKE

That corking old combat classic *Ikari Warriors* is now out on budget, thanks to Encore label. This poke from Carl Surry takes out any features you can do without.

```
10 MODE 0:FOR i=0 TO 15
20 READ x:INK i,x:NEXT
30 BORDER 2
40 DATA 13,6,3,15,16,0,1,2,14
50 DATA 26,24,9,12,21,22,19
60 OPENOUT "W":MEMORY 4799
70 LOAD"!screen.bin
80 LOAD"!warriors
90 'Pokes
100 'Infinite bullets
110 POKE &6B20,&B7
120 'Infinite grenades
130 POKE &6B98,&B7
140 'Immortality
150 POKE &6A38,&18
160 CALL &FFD0
```

BBC

INTO THE MARKET

As I have already mentioned several times in the last few weeks, Acorn is slowly, painfully, making the transition from being an entirely technology-led company, to a marketing orientated one. Its latest shift in this direction comes with the announcement of a new marketing and sales division in Australia. This will comprise its old distributor, Barsons, for which it has bid A$585,000 (about £268,000) on the Melbourne stock exchange.

Apparently this new move was planned even before a visit to Australia by MD Sam Wauchope in February, who commented: "Acquisition of Barsons would allow us to capitalise on the good work that it has done since 1983 in building up a distribution infrastructure and excellent dealer network." Surprisingly, the press release gave strong emphasis not only to Archimedes computers, but also the 8-bit Master 128 range. This is in contrast to recent offerings, which have hardly mentioned the Master at all. This could mean that Acorn are intending to actively market the 8-bit range in Australia for the foreseeable future.

MOVING ON

A couple of weeks ago I mentioned the MOVE command. This allows you to copy files around different filing systems. Some of you, however, were confused with another MOVE command. This is supplied as a DOS Plus transient command, and is only available with version 2.1 of the Master 512 board and software. Transient commands are DOS Plus equivalents of * commands and are executed by just typing their name plus a series of optional parameters. MOVE, in fact, does a similar job to *MOVE, it copies between DOS Plus and BBC filing systems. It is similar to, but an improvement on, the GETFILE and PUTFILE commands supplied with earlier versions of DOS Plus. As these are so badly bugged they are unusable, I recommend that you get hold of a copy of the version 2.1 software which includes MOVE.

SCHOOL'S OUT

Although the quality of educational software is variable, the problems are not all the fault of software houses. Many teachers are computerphobes, and even those willing to learn get minimal training and support.

As an example, my mother went on a database course 20 miles from her school. After half a day all the teachers were (legally) given copies of the software to take back with them.

The first time the disk was used it became corrupted and she was left stranded with a class to take. Result – an agonised telephone call to me for my help in sorting it out. To get another copy of the software she would have had to go to Cambridge (over 40 miles away) in her lunch break.

This sort of thing is just typical of the incompetent way in which we British tackle technology-based education. And if you think I'm blowing this up out of proportion, believe me, this is just the tip of an iceberg, I can think of several similar episodes.

Andrew Brown

SPECTRUM

WRITE ON

Music Writer, Gary Rowland's, long awaited music writing utility is here at long last. First impressions seem to suggest a professional piece of software that drags the Spectrum away from its decidedly dodgy Jason Donovan-esque music making image.

For starters, the whole thing is controlled with a smooth, fast, almost Mac-like, icon and pointer system, and the well-presented manual is full to overflowing with sophisticated features. However, as I'm someone who thinks quavers are a type of potato crisp, you'll have to wait for me to become a bit more familiar with exactly what's possible before getting a proper low-down on the package. A demo tape is also now available which allows use of nearly all the facilities and costs only £3 (refunded if you purchase the full blown thing) from Garry Rowland, 24 Parsloes Avenue, Dagenham, Essex RM9 5NX.

AROUND THE WORLD

Although Britain was practically the only civilised nation to take the Spectrum to its heart and lavish affection and bundles of money on it, fellow Speccy owners are spread throughout the world in countless other countries, all of which, incidentally, have better football teams than us. Now I was aware the Spectrum was fairly big in Poland, but apparently there's also a stronghold of fellow Speccy enthusiasts in Denmark and I know because a few copies of their excellent fanzine *Sinclair Freak'eren* have landed on my desk.

Due to the overt Danish nature of the mag I couldn't understand many of its nicely laid out pages, but there was a lot of Coupé coverage and copious plugs for *Express*, so it must be good!

As well as being a clear example that Spectrum-owning enthusiasm is a universal thing, the mag could be an excellent way for smaller independent software producers in Britain to improve their export figures, help to redress the balance of payments deficit and make a lot of software-starved Danes very happy indeed. Extend the fraternal rubber key across the ocean by contacting Leif Mortensen at Bryggervangen 29, 7120 Vejle Ost, Denmark or *Freak'eren's* English correspondent, Roger Brookes, at 50 Fox Howe, Coulby Newham, Middlesbrough, Cleveland. Remember to enclose SAEs or International Reply Coupons where appropriate.

POKE TIME

Our very good friend Miktor has just let rip with his latest bumper crop of pokes. His latest hacking conquest is *3D Pinball* and pausing only to think up a good double entendre and failing, it gives you infinite balls. To get the aforementioned eternal benefit simply type in the extremely short listing, RUN it and play the original game tape from the start. I think yet another round of applause and throwing of hats in air for Miktor is in order.

```
10 REM 3D PINBALL (BALLS)
70 POKE 62900,0
110 MERGE "": RUN
```

READING THE MANUAL!

I've just spotted something in the *Music Writer* manual (see above) that you've just got to know about. It's a possible fix for that bane of Plus 3 owners' lives that's had column miles devoted to it, the incredibly annoying Plus 3 sound fault. Now I haven't actually tried this myself but if you want to put a stop to that awful Kylie-with-mad-cow-disease-singing-2,000-leagues-under-the-sea-type distorted drone try this: Take the sound output from your Plus 3 from either the SOUND output socket or the PERITEL socket.

Apparently this output will drive the small amplifier speakers you can use with Walkmans. The Tandy Mini Amplifier Speaker is mentioned by name.

Robin Alway

SAM COUPE

WORD'S OUT

Barry Walton has just written to tell me about two Coupé-specific pieces of software he's using.

Firstly, there's Tasman's classic Speccy word processor *Tasword 2* which is now available in SAM compatible form. Barry reckons "it has its limitations and its drawbacks," but "is easy to use". at the moment only a 3.5-inch disk version is available for the Coupé, priced at £19.95, but Barry tells me a cassette version is imminent. Tasman is planning a much enhanced *SAM Tasword* but this should fulfill your word processing needs and, with any luck, you will be able to upgrade to the SAM version when it's released. Contact Tasman on 0532 438301.

TAPE LERM

Barry also extolled the virtues of *SAM-Tape* from Lerm software which you may remember me mentioning last week. He says: "It's the only emulator I've come across which works!" and therefore "represents good value." *SAMTape* costs £8.99 from Lerm Software, 11 Beaconsfield Close, Whitley Bay, Tyne and Wear, NE25 9UW.

FANS OF THE SAM

Another Coupé fanzine is set to roll off a photocopier near you soon. According to my calculations that's two SAMzines now being published, which is pretty encouraging considering the shiny-newness of the Coupé.

Anyway, *RGB Coupé* is the title and each monthly issue will have a 50p cover price (which includes postage, packing, poll tax etc) and the address to send off to is Edward Walker (Editor), 12 Oakfield Avenue, Birstall, Leicester LE4 3DQ.

Robin Alway

PCW

THAT'LL TEACH YOU

"I don't want to go to school today, Mum," says John. "The kids in my class hate me, the work is all boring and there's far too much to do, and I'm fed up with living on pocket money when I could leave school and get myself a really good job. I'm leaving!"

"But you've just got to go to school, dear," says his mother. "You're the head of the maths department".

Old joke this may be, but I doubt that any teachers reading are smiling much. However, a new software package that promises to help overworked teachers with their paperwork is now out: *Marksheet*, from Abacus Educational Software (11 Woodcote Drive, Orpington, Kent BR6 8DB). It lets you keepmark sheets for lots of classes on disk. You can enter one mark per term and it will average out the marks per pupil across subjects, and per subject across pupils.

It does what it does pretty well, and the mark sheets can be inserted into *LocoScript* for reports and so on, but at £45 for a rather low-powered package it's expensive. An alternative is to buy *Mini Office* for £30 from Database on 0625 878888 and use the spreadsheet to do exactly the same and more, and the graphics module to illustrate the figures with pie charts and graphs.

BARGAIN BASEMENT

If you're thinking of dabbling in machine code on your PCW, Arnor is currently selling its excellent *Maxam II* package, a complete machine code development system, for £24 – half the usual price. Details on 0733 68909.

GRID IRONING

Before using *LocoChar* to design your own figures, you can use *LocoScript* to print out a grid like the one *LocoChar* uses, for you to draft your designs on. You will want to design three grids using the following specifications.

Decimal points are [EXTRA] full stop. Select line pitch 7 1/2 with [+]LP7 1/2 [ENTER] at the top and print in draft.

NLQ: 24 wide by 18 deep; all decimal points except rightmost column and bottom two rows (all lower case letter o) and the rest of rows 5, 19 and 22 (hyphens)

Draft: 12 wide by 9 deep; all decimal points except rightmost column and bottom row (o) and the rest of rows 3, 7 and 8 (hyphens)

Screen: 8 wide by 8 deep; all decimal points except rows 3, 7 and 8 (hyphens)

SURPRISE, SURPRISE

For *Protext* users. Surprise No. 1: press [ALT][SHIFT]-2 in command mode (2 on the keypad down at the right, not on the top numbers row).

Surprise No. 2: Try saving a file with a question mark, or an asterisk, in the filename.

UTTER RUBBISH SLOT

A friend bought an Atari Portfolio pocket computer this week and was assured in four major shops in Bristol that she wouldn't be able to transfer files to her PCW. Rubbish. May's edition of *8000 Plus* magazine shows you exactly how to do it on page 42.

Rob Ainsley

MSX

SURPRISE, SURPRISE

When you purchase a game for only £2.99 which has the naff name *Attacked* and which is supplied with only rudimentary instructions, you don't expect to be very impressed. It therefore came as a real surprise to me to find that Micro-Value has a gem of a game on its hands at a real bargain price. Very often games at this price are mere *Space Invader* clones and this is what I expected from this one. However, this description could not be further from the truth, for this is a game that has all the graphics (and more) of *Elite*, without the boring bits like trading.

Load in the game and let the demo run. It is presented in 3D with a choice of a horizon line across the screen or ground spots to help with perspective, and the enemy craft are drawn in excellent wire-frame graphics. Your ship is equipped with a laser to destroy these, shields and a fuel supply. Flying too fast quickly exhausts the latter, but fuel can be replenished by flying into the debris of destroyed enemy ships or through automatic fueling arches. The graphics are really impressive – top marks to the programmer here. Even installations on the ground move or revolve in spectacular fashion. To aid you in the quest of destroying as many alien ships as possible, a map of the area is also presented on screen, sometimes you wish it wasn't!

I could not find any part of *Attacked* to criticise, even the music is good, and the sound effects are spot-on with realistic zaps, crashes and the most almighty bang when your ships gets it. What more can I say about this game? For Fun with a capital F, especially at the price, *Attacked* is the bargain of the year and, hopefully, not the last game that we shall see on the Micro-Value label.

COMMS UPDATE

Regarding the comms article that was featured a few weeks ago in *Express*, I would like to thank a gentleman called John Magee for writing in with more information on comms devices for the MSX user.

I have already mentioned in a previous issue that the Toshiba RS232 cartridge is still available so, leaving this device aside, let's look at some other comms devices. John has mainly based his letter around the excellent Philips auto-dial multi-baud cartridge modem, a plug-in device that needs no RS232 to operate. However, they are difficult, but not impossible, to find and you will need 64K of memory and a disk drive. The software supplied on disk is called *Data Communications* and allows for Viewdata and scrolling BBs.

According to Mr Magee, the Viewdata mode offers *Carousel*, a stand-alone word processor which allows you to store up to 200 pages and has all the usual off-line options plus the support of all the Prestel codes.

How much would this device cost? Well prices of around £60 seem to be the current going rate but, short of nipping over to Holland, how do you purchase one? Your best bet is to take John Magee's advice and contact Vernon Wyland, 396 Park Lane, Maghull, Merseyside L31 1HQ.

Keith Neal

C64

ADVENTURES MODERN....

Many of you will have played an adventure game that usually goes by the name of *Colossal Cave*, a text-only classic seen in several different guises on the Commodore 64. Or, perhaps, your first introduction to this type of software was a game called *The Quest*, if my memory serves me well, another text-only game that was given away free with the machine in the distant past.

Things have changed since those early days and, to see the shape of the future, you could do worse than take a look at *Castle Master*, the latest in the Freescape system of games from Incentive Software. This particular game owes much to the adventure genre, and is well worth spending a few pennies on. £9.99 on tape or £14.99 on disk is the damage, and Incentive can be found at Zephyr One, Calleva Park, Aldermaston, Berkshire RG7 4QW.

...AND TRADITIONAL

Those of you who prefer the more traditional things in life, like real ale, music played by real people using real instruments, and telephone boxes that you can stand inside, rather than those that only allow you to hold a conversation in the company of pouring rain, driving wind, and passing lorries may prefer playing an adventure called *Atalan* from Atlas Adventure Software.

The game is text only, has numerous problems to solve and many treasures to find, and costs a mere £2.99 on tape or £3.99 on disk.

Cheques or postal orders only (in other words, don't send cash!) to Atlas at 67 Lloyd Street, Llandudno, Gwynedd LL30 2YP.

POKE AWAY

Or at home, I'm not bothered. Five collections of numbers to give you infinite lives on each of the following games:

• *Ninja Commando*,

```
POKE 10457,173:SYS 14848.
```

• *Bombo*,

```
POKE 11417,173:SYS 387.
```

• *Phobia*,

```
POKE 5390,189:SYS 2172.
```

• *Dominator*,

```
POKE 2293,165:SYS 2113.
```

and finally for this week,

• *Robocop*,

```
POKE 4416,0;SYS 32768.
```

CHEAPO-CHEAPO SOFTWARE

One pound per disk is the asking price from Mark Firman, who has set up a public domain library that covers all manner of software and which, I'm sure, will contain something of interest to very nearly everybody.

You know the sort of thing, oodles of programs on oodles of disks, all of which have been cheerfully donated to the world by generous and kind-hearted programmers.

For further details, as they say, write enclosing an SAE to Mark at 11 Denmark Drive, Sedbury, Chepstow, Gwent, NP6 7BD.

Pete Gerrard

QL

MORE DRIVES

Miracle recently upgraded its popular Trump Card memory expansion/disk interface to take 1 megabit DRAMs. They also took this opportunity to modify the disk controller circuitry so that up to four disk drives may be connected – the earlier unit could only handle a maximum of two drives.

Customers with the earlier Trump Card who wish to connect more drives needn't feel left out. For £15 Miracle can supply an adapter (a small circuit board that can be installed by the user) and replacement EPROM, that allow the additional drives to be connected.

Further details from Miracle Systems Ltd, 25 Broughton Way, Osbaldwick, York YO1 3BG. Telephone (0904) 423986.

IN PRAISE OF MACROS

Some time ago I extolled the virtues of the GST Macro Assembler, and in particular its powerful macro facility. I've recently been doing some work with it and made a lot of use of the macro library, MACRO_LIB, that comes with the product. A macro, by the way, is a sequence of source code statements that is given a name. Wherever that name appears in the rest of the program it is replaced by the sequence of statements. Macros may have parameters that are substituted at appropriate positions in the macro expansion.

MACRO_LIB gives the programmer a full range of structured programming constructs, such as `IF-THEN-ELSE-ELSEIF, FOR-WHILE` and `REPEAT-UNTIL` loops. For instance, the following code fragment executes the statements inside the loop 100 times:

```
FOR.W D3 - #1 TO #100 DO.S
statements inside loop
ENDFOR
```

Judicious use of these macros gives the assembly language programmer many of the benefits of a structured high-level language. It's quite feasible to take a program written in C or Pascal and translate it almost literally into assembly language, using macros.

VISION MIXER

Vision Mixer, by Dilwyn Jones, takes a series of screen images and displays them with special effects, such as mixes and wipes. Of course, the effects are nowhere near as good those achieved on the TV, for instance, but the QL is very much cheaper than the systems used by the professionals. Applications include advertising and lectures.

The images can be generated from SuperBASIC programs, or drawing packages like *GraphiQL* or *Eye-Q*. A disk system is recommended and a minimum of 256K of RAM is required.

I found the program very easy to use and, considering the limitations of the QL, very effective.

Vision Mixer costs £10 from Dilwyn Jones Computing, 41 Bro Emrys, Talybont, Bangor, Gwynedd LL57 3YT. Telephone: 0248 354023.

John Torofex

XE

MIND YOUR LANGAUGE

I've had a letter from John Stitch of London asking about the availability of replacement langauges for the Atari 8-bit. Although John's using Turbo BASIC (the super-fast BASIC compiler available free from the public domain) he would like to get hold of Pascal or COBOL to help with his computer studies course at technical college.

Good news and bad news I'm afraid John. There used to be a Pascal compiler available called Kyan Pascal. Originating in the United States, Kyan Pascal was an excellent interpretation of the language featuring a command structure which conformed to ISO standards (meaning that anything you write with Kyan can be easily transported to other machines such as those at college, without making major changes to the code), had a comprehensive manual and tutor book and made use of any extra memory your system had, such as that in the 130XE to store the compiler and run time code.

The language cost around £70 (if my memory serves me correctly) but Kyan never managed to secure UK distribution. You may be able to get hold of a copy by placing an ad in the reader section of Shopping Express but be prepared for disapointment.

As for COBOL, there's never been an implementation of the business-person's favourire langauge for the 8-bit. This is probably due to memory restrictions - COBOL is an immense language which need sat least two drives and lots of RAM to run.

Edmund Blake

ARCHIMEDES

COPY, DON'T COP OUT

If you are restricted to a single floppy drive, copying files can be a long-winded process. This is particularly true if you're copying a directory, which may contain a number of different files.

With a single drive, you will need to make at least one disk swap for each file copied. If the files are large, this may increase as the ADFS takes several bites at the file.

There are two ways of improving matters without spending money, and three ways if you have some dosh to spare. If the problem is copying large files, deserting the Desktop and using the RISCOS COPY command with the 'Q' (for 'Quick') option will make use of application memory in transferring the files. Don't do this if you have applications running, though.

The second way is to go to the task manager and stretch out the column marked 'RAM disc'. This creates a RAM disk icon and you can adjust the disk's size by moving the mouse left or right. Copying files to the RAM disk and back out to a destination floppy only requires one disk swap, assuming the RAM allocated to the drive is sufficient.

With money, you can add more memory and enlarge the size of your RAM disk, add a second floppy or add a hard drive.

Any one of these techniques should improve things for disk copying, but only by getting a second floppy drive will you be able to copy files floppy-to-floppy in a single operation.

EASIWORD

Minerva Software is not just releasing a variety of games, but some serious applications as well. New on its books is *EasiWord*, a budget word processor for a mere £39.95. This application has been written specifically for RISCOS, rather than being ported across from other machines. It claims to have all the standard features of word processors and can manipulate text blocks as well as searching and replacing text.

It can also use the Arc's fonts to good effect and can display text enlarged on screen, which should aid children and the sight impaired. *EasiWord* will be available from the end of May and Minerva Software can be contacted on 0392 437756.

THE ONLY WAY IS UP

N Olner writes to say he/she is thinking of upgrading from an ST, due to Acorn's recent price cuts. What a wise move. N wants to know if the TV modulators for the Arc are any good, whether they can handle all the Arc's screen modes and, alternatively, whether the standard monitor can handle them.

Well, N, the simple answers are that the higher-resolution modes on the Arc, and there are 255 theoretical modes, can only be handled by a multi-sync monitor with a high scan rate.

I've not used any of the Arc TV modulators, so can't comment on their qualities, but a TV is unsuitable for displaying anything but fairly low-resolution modes, such as are often used for games.

The medium-res monitor supplied by Acorn is a rebadged Philips unit which is capable of surprisingly good resolution, but is still not up to all the Arc's modes.

If you feel you will need to use high-resolution displays, you could look at multi-sync monitors from NEC, Taxan, Philips or Eizo.

Bertrum Carrot

EASON EASE OFF

Chris Eason seems to be occupying a goodly proportion of the editorial space in *Express* these days.

His latest missive ticks me off again for not reading the manual and asks for help concerning *Impression* and his Panasonic KX-P1081 printer. The sample print-out from *Impression* which he encloses has a page of enlarged text with an 'A' and an extra line-feed at the bottom.

If Chris had followed this column as avidly as he maintains, he would have read about one of the possible causes. The same type of error was highlighted on my own laser and traced back to a faulty *Impression* dongle. Try talking to Computer Concepts about it.

Another possibility is that the Panasonic KX-P1081 is not fully compatible with the Epson FX80 driver supplied by Acorn.

20 MEGABYTES ON 3.5

In the middle of last year I began to receive the first rumours of a high-capacity 3.5-inch disk being developed in Japan. Those rumours never died completely and have resurfaced in a couple of recent stories about IBM and Citizen.

The IBM story, reported in the trade magazine *MicroScope* and confirmed by another source, says that the company is planning to release a PS/2 machine later this year with 2.88Mb drives. These will use 'vertical' recording technology which allows more data to be stored in a given space on the disk – a technique patented by Toshiba. There are over half a dozen manufacturers working on the new drive, and it's likely to be available as an add-on for existing machines, as well as fitted to new PCs. The drive will be able to read existing 720K and 1.44Mb disks.

One of the manufacturers working on 2.88Mb drives is Citizen, but this is to an extent less exciting than the 20Mb drive the company is also said to be developing. This will use an optical track to position the drive heads more accurately over a given disk sector. The technique increases data capacity of the disk by up to 20 times.

The development of the Citizen drive could make quite a change to hard drive requirements, particularly if last summer's rumours of compatibility with existing 3.5-disks and prices of £15 a disk for 20Mb prove true. The crunch will come, though, on the price of the opto-magnetic drive.

WAND, A LUST

Soft Image, the creator of the presentation graphics program *Davrelle*, continues to market a device called the Wand, which is much like a remote control for a computer. The Wand can now be used with the company's latest presentation program, *Show Business*. This program helps combine data from a number of different applications and collate it in a form which can be used with existing presentation graphics programs, such as *Freelance Plus*, *Harvard Graphics* and *Show Partner*.

The Wand costs £249 and *Show Business* will be launched in July. Soft Image can be reached by phone on 071-636 3333.

UPS AND DOWNS

If you have troubles with inconsistent mains supplies, it may make financial sense to install an uninterruptible power supply (UPS) between your PC and the mains plug. Before you do, though, you should bear in mind the two types available. An 'off-line' power supply monitors the mains voltage and switches in only when it detects sufficient fall in the level to constitute a mains failure. With the speed of PCs increasing all the time, there is the potential in this for loss of data. Any circuit will take a finite time to respond, and voltage to the PC will drop below its normal working level until the UPS cuts in.

Although the suppliers of this type of UPS will assure you that the switching is well within the power supply tolerance of your own machine, there is another way to do it. If you run your computer through the back-up battery that all UPSs use, then no switching has to take place. Put simply, the mains is run through a battery charger, which trickle-charges a low-voltage battery. The battery in turn powers an inverter and a oscillator to increase the voltage and turn it from DC into AC. The PC then takes its power from the inverter.

The whole system is controlled by an electronic feedback loop and relies on the fact that the charger can supply energy at a greater rate than the PC is pulling it out through the inverter. UPSs start at about £400 and get rapidly more expensive, depending on the power you want to draw from them.

ARTS & LETTERS

There are a lot of new graphics packages coming along and one of the sexiest to come to my notice recently is *Arts & Letters*. This is another Windows package, which specialises in clip-art. You get your clip and transform it into thousands of others by flipping it, changing the style of its outline, rotating, slanting, or duplicating it and adding shadows.

You can combine clips and, of course, all of them are vector graphics, meaning you don't lose resolution as you enlarge them.

There are two products in the range: the *Graphics Editor* and the *Graphics Composer*. The editor allows all kinds of graphic manipulations, including tracing imported bitmaps and outputting full, four-colour separations. The *Composer* concentrates on adding effects to existing clips. Further information on both products is available from Tekware on 0562 882125.

UPDATE ON PARADISE

Those nice people in South Wales with more software products than Emelda Marcos has shoes, have sent me another catalogue. Software Paradise (0222 887521) now has a specialist catalogue of Windows products, which it has grouped together for those keen to get into the swing of this leading graphical user interface (GUI).

Over 200 programs are listed, ranging in application from DTP and presentation graphics to spreadsheets and databases, and in price from £29.95 to £3,995 (for a mainframe-to-PC tool, called *ManagerVIEW*).

DOWN IN A FLASH

The price of Flash EPROM is set to come down by as much as 35 per cent, according to an announcement from chip maker Intel. The company believes prices could drop as low as £7 for a 1Mb chip by the beginning of next year. This would be good news indeed for Psion, which uses the new technology as the basis of its Mobile Computer range, and is still having to quote high prices for the flash EPROM cards it supplies with it.

There's also talk of increasing the effectiveness of the electrical erasure which makes this form of non-volatile memory so attractive. Instead of having to erase the whole chip in one go, it should soon be possible to selectively erase a small section of it, effectively making it possible to wipe a flash EPROM disk, file-by-file.

• Price drop due soon for flash EPROMs.

VPMOVER

If you're a regular user of *Ventura Publisher*, you'll probably have noticed how quickly your hard disk fills up with text, graphics and layout files that make up a typical *Ventura* chapter. A new utility from Ctrl Alt Deli, *VPMover*, sets out to ease that problem considerably by compressing chapters into archives.

It does this by taking all the files listed in the .CHP file and compressing them using a new set of algorithms, developed in Japan.

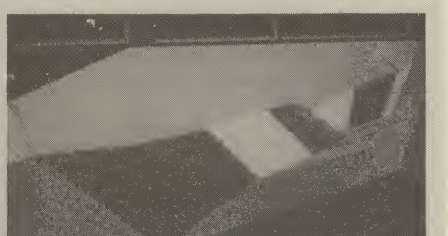
Using *VPMover* also automatically changes the path to all the included files so that *Ventura* can still find them. The compression utility can be used with other files, as well. The price is £57.44 and CAD is on 0908 662759.

Simon Williams

POWERDROME

PC GAME of the WEEK

Electronic Arts • £24.99



This is essentially a racing simulator, but *Powerdrome* puts you behind the wheel of a vehicle Ferrari hasn't even dreamt of yet, on a track that would give Prost nightmares – and Senna pods. Your vehicle, called Typhoon, is essentially a jet plane, flying down a track that twists and turns in all three dimensions.

There are six tracks in all, ranging from the basic test oval on Earth to the high-speed Otyaka on Sunrise. Each is different, but you can modify the Typhoon in a number of ways to suit. The aerofoil and air brake can be altered to change its sensitivity to the controls (the game can be played with joystick, keyboard or mouse); you can choose between three types of fuel to balance thrust against rapid burning; and you can fit a variety of filters to your engine to cope with the different atmospheres of each planet – oxygen for earth, but ammonia for Sunrise and sulphur for Vaagner.

On each track you choose either a practice run or to race against five contestants, each flying a different style plane. You get 15 minutes on the track before each race to get used to the track and qualify for a good suspensor position, and then you're off. Each race can last from 5 to 50 laps, and involves frequent stops at the Robopits for refuelling, repairs or filter changes. These last are necessary when darkening skies warn of a storm, and you'd better fit particle filters fast.

The display, particularly on VGA, is excellent with a very fast vector representation of the track. The game is pretty addictive too, although I found myself winning races with alarming ease. There's even an option which links to another computer so you can race directly against a friend.

Matt Nicholson

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ST EMULATION AT LAST!

Funny how people seem to listen to my little rantings. Regular readers of this column may remember a little 'wish list' that I compiled containing items of hardware and software that I felt that the Amiga required. Included in my little wish list was an item that was mentioned as more of a joke than anything, but it appears that at least one company took my words to heart.

We are of course talking ST emulator. Yes folks, after the earth shattering news that the Amiga was to be blessed with a Spectrum emulator to add to its already impressive range of emulation packages, it seems that we are soon to be able to take advantage of the wealth of high quality software (no joke intended) available for the Amiga's cousin, the Atari ST (they're more closely related than you'd actually think!).

The Medusa Card is an Atari ST emulator for the Amiga that is manufactured by Medusa of West Germany. Currently, the device is only available as a plug in card for the Amiga 2000, but Medusa intends to produce versions for both the Amiga 500 and 1000. Apparently, the card handles only I/O, all the rest of the clever business involved in emulating Atari's baby is handled via software (let's face it, emulating an Atari shouldn't be too much of a strain on the Amiga hardware!).

Just like the A-Max Mac emulator from ReadySoft, the Medusa ST emulator requires you to install a set of Atari ROMs, which should be considerably easier to do than buying Mac ROMs (anyone who has tried to source Mac ROMs will know what I mean!).

Presumably, because the emulator can use all Atari ROM versions, there's no reason why the emulator can't emulate anything from very early STs, right up to the latest versions of the ST including both the Stacy and the new STE running Rainbow TOS version 1.6.

• Run ST programs on your Amiga!

With a real ST, it's only actually possible to use up to 4Mb. However, the Medusa emulator removes this restriction with the option of addressing the full Amiga memory map – a total of 8Mb!

According to Medusa, the card runs virtually all legally-written ST software at about 90 to 95% of the speed of a standard ST. Medusa has tested a range of ST titles and claims that all MIDI software (including packages such as *Cubase* etc), GFA products and programs such as *Calamus* and *Tempus II* run without any problems.

For musicians in particular, the ability to run ST music software will be a real boon (I for one will be purchasing one as soon as it is available). Unfortunately, many Atari games will most certainly not work with the new card as they bypass many of the ST's low level calls, but as long as it runs *Super Sprint* then I'll be happy!

Medusa hopes to sell the card at about £180, which is certainly good value for money. As yet, no UK distributor has been appointed, so unless you can wait for such an event, give Medusa a bell on 010 49 2330 801132

WINDOW CLEANING

In AmigaBASIC, you can give a window a name when it is first opened, but it cannot be changed unless you close and then re-open the window.

It is even worse when you try to name a screen – with the current 1.2 release of AmigaBASIC, you can't even assign a name to a window when it is first opened!

Fortunately, Intuition (the Amiga's windowing system) includes a routine which will do the job. The code below will let you change the names of both a window and the screen it is displayed within. Note that you will have to use the AmigaBASIC ConvertFD utility to create a .bmap for the Intuition library.

STATESIDE SCENE

New Horizons Software has announced the impending release of *ProWrite* version 3 for the Amiga. Although no details are yet available concerning features offered by this latest upgrade, *ProWrite* 3 is promised to offer many major enhancements over its predecessor, *ProWrite* 2.5. Look out for more in a future issue of *Express*.

After the recent announcement by Commodore Europe of the A500 FunLab music bundle (A500 plus Steinberg sequencer and Kawai keyboard), it seems that Commodore US has jumped on the music bandwagon with the announcement of an American Amiga music bundle.

Readers of several American music publications will be offered the chance to buy an Amiga 2000 complete with a 1084 monitor, MIDI interface and three Dr T music products (*KCS* 3.0, *Copyist Apprentice* and a *Caged Artist* patch editor of their choice) for the price of the Amiga 2000 alone.

Also on the subject of music, it seems that Passport is soon to release an upgraded version of its highly-regarded *Master Tracks Pro* sequencer system for the Amiga.

Once again, details are sketchy but it is believed that this latest upgrade will bring the Amiga version in line with Passport's Mac version. This comes hot on the tail of Passport's recent announcement that it would be removing all copy protection from their Amiga, Mac and ST music products after requests from users.

VersaSoft has released an upgrade to its Amiga *dBase III Plus* compatible database system in the form of *dBMan* 5. As well as full *dBase* compatibility, *dBMan* 5 offers many enhancements including a complete relational report writer, extensive windowing support, arrays and UDFs, save and restore screens, the greased lightning compiler (!) and optionally unlimited runtime distribution.

For more info, give VersaSoft a call on 0101 408 723 9044.

Jason Holborn

```
LIBRARY          "intuition.library"
WinName$ = "My New Window Name"+CHR$(0)
ScrName$ = "My New Screen Name"+CHR$(0)
CALL SetWindowTitles(WINDOW(7), SADD(WinName$), SADD(ScrName$))
LIBRARY CLOSE
```

• Routine for naming a window (see Window Cleaning).

PLAYING TIP

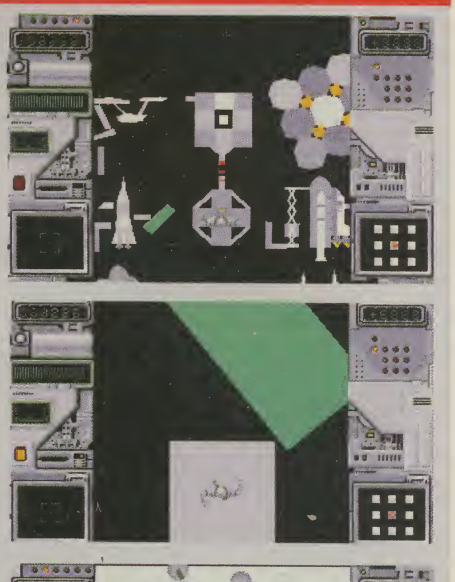
INTERPHASE

Other 3D games have an object viewer, so where's the one for *Interphase*? Well all you have to do is start the game and type Fenny (Capital F, little enny (?)). Now simply press the left mouse button to cycle through the objects in the game.

Matt Jones, Bishops Waltham

AMIGA GAME of the WEEK

ROTOX



US Gold • £24.99

Puzzle games seem to be making something of a comeback these days, what with the jaunty Infogrames game *Jumping Jack Son* (game of the week in *Express* 79) and now US Gold is getting in on the act with *ROTOX*.

You play the part of Lieutenant Kowalski – mortally wounded in an attack from alien warriors. The Earth Weapons Research Division has rebuilt him, turning him into an experimental fighting drone. The new system is a remote-controlled robot-cum-tank, with all manner of weaponry at its disposal. The Remote Offworld Xenoprobe (R-OT-O-X), is still very experimental and has to be tested before it is put into full use, so a series of huge test platforms have been built in Neptune Space to put the new machine through its paces.

Each level consists of nine areas, each inhabited by a number of target drones. All the target drones in a particular area must be destroyed before ROTOX can move onto the next. Travelling to the next area isn't as easy as it sounds however, as all the platforms are linked by a series of shifting walkways, which have to be carefully negotiated – otherwise the expensive new system will plummet into the void. Once all nine areas have been cleared, then ROTOX is teleported to the next zone, which will test other areas of combat, taking ROTOX to its limits.

Despite being classed as a puzzle game, *ROTOX* is more realistically a thinking gameplayer's shoot-'em-up. The pace starts off easily enough, but the swarming aliens make the going more frantic and increasingly difficult as you progress through the levels. The moving platforms require careful timing, and routes have to be thought out in advance to successfully complete each zone. This separates *ROTOX* from other shoot-'em-ups and adds a nice twist to the game.

The presentation is very good, with colourful sprites and smoothly animated filled vector graphics to portray the weird and wonderful platform arrangements. Even if science fiction shoot-'em-ups seem a little on the boring side, *ROTOX* is one to see. It has enough action to keep the adrenaline pumping, but also contains enough of a puzzle element to tax the old grey matter.

Maff Evans

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INTELLIGENT FILE SELECTOR

The ST's standard built-in GEM file selector is an operating system function that most GEM programs, including accessories, use to enable you to select a directory path or file to access. Unfortunately, like the rest of GEM, it's not all it could be.

Cognoscenti, aficionados, connoisseurs, ST amateurs and other foreigners have long known that there's a rather slick American program – or, more accurately, a collection of programs – called *Universal Item Selector* which does a fine job of replacing and improving on all the functions of this standard file selector, while adding several new features and utilities of its own. Once it is installed, programs that call the standard GEM file selector bring up *UIS* instead, offering access to a wide variety of file manipulation functions and utilities.

You can, for instance, format disks; copy, move, delete and rename files and folders; print directories and files; create folders; find files anywhere; set file paths; set file attributes; access any drive; and display available RAM and disk capacity.

The latest version, *UIS* III, has a few new features, too. There's a built-in default configuration, for one thing, so that you no longer need an external configuration program; there's also a new bi-directional lasso function with automatic window scrolling; you now have a neat UNDO function; and there are another dozen improvements, updates and additions.

UIS is written by Application and Design Software, 909 NW Starlite Place, Grants Pass, OR 97526, USA. But you needn't go trans-Atlantic to get your copy, for exclusive UK distribution has been secured by The ST Club, who can be found at 49 Stoney St, Nottingham NG1 1LX (or phone 0602 410241).

There's better news yet, for while *UIS* used to cost £34.95, the upgrade is, for the time being, a mere £15.95. But hurry, for this launch price lasts only until the end of July. So get to it!

PS. Owners of *UIS* II should get in touch with The ST Club right away for details of how to upgrade.

SHELL SHOCK FROM GFA

GFA Data Media has released GFA *G-Shell*, developed to enhance the GFA BASIC 3.0 Compiler. Priced at a mere £19.95, it's available from GFA Data Media on 0734 794941.

By the way, whenever you respond to something you see in *Express*, don't forget to give us an honorable mention.

FONTS FROM ST CLUB

It's clear that Paul Glover and the people at the ST Club have been keeping themselves busy. In addition to the rather nifty *Universal Item Selector* (see the item above), there are three other new releases available.

One is *Fontpac Plus*, a new series of font sets for use with ST applications that improves the meagre range of fonts for the as-yet poorly represented Laser/DeskJet printers.

The other two new additions to The ST Club's range are *Sig2Gem* and *Gem2Sig*. These are a pair of programs for converting *Signum* fonts into GEM fonts and vice versa, and enable you to use the ST Club's *Fontkit Plus* to edit and create *Signum* fonts for use with *Signum* or indeed *Script*.

Registered users of *Fontkit Plus* 2 can take advantage of these conversion programs, complete with printed documentation, for £2.50 from The ST Club (see address above), while the *Fontpac Plus* font sets work out at under £10 per typeface.

MUSICIAN'S FRIEND

The trouble with MIDI and all that jazz is that there's no standard format: MIDI instruments from various manufacturers are incompatible with others.

Now Bath-based Keynote Music Software has developed *Chameleon*, claimed to be the world's only programmable universal patch librarian for the ST.

It offers instant access to all sounds for all instruments while you're using your sequencer, and comes ready supplied with hundreds of libraries which support all popular MIDI instruments, past and present, including those manufactured by Yamaha, Roland, Korg, Ensoniq, Casio, Kawai, Akai and Oberheim.

Indeed, so keen is the company to get on top of the incompatibility problem that it is offering a free service to create new libraries requested by users of *Chameleon*. This means that users can guarantee that the program will support all their instruments – even if a library is not already available.

This is a boon for professional ST musicians (of whom there are hundreds, if not lots), yet you can get your hands on a demo version that has the save option disabled for a mere £3.

The full universal patch librarian costs £89.95 from Keynote Music Software, Freepost, Radstock, Bath BA3 3YA; or call 0761 32610.

NEW SYNTH

With its built-in MIDI, the ST is without doubt the most popular computer among professional musicians, and there can be few high-tech studios in the world that don't possess a few Ataris. Now Sound Technology has announced a new range of synthesisers manufactured by Evolution Synthesis.

The first is the EVS-1, a low cost 19-inch rack-mounting synth with drum and percussion samples.

"EVS-1 is a new kind of MIDI synthesiser expander module," claims Sound Technology's Tony Williams, "designed to bridge the gap between analogue and digital sounds."

Digital Technology guarantees absolute perfection of pitch and freedom from 'drift', while the use of algorithmic multi-synthesis ('scuse me while I put me teeth back in) enables sounds to be created in a very intuitive way.

The synth is eight-sound multi-timbral with up to 16-note polyphony, and sounds may be layered using the bank function. There's also a percussion section, containing a good variety of 16-bit 44.1kHz sampled drum and percussion sounds.

And the EVS-1 comes with an ST-based editor-librarian package, including a large selection of library patches, giving access, it is claimed, to a "potentially limitless" library of editable sounds. 80 preset sounds are included, together with 20 user memories, and bank programming is possible using the front panel controls.

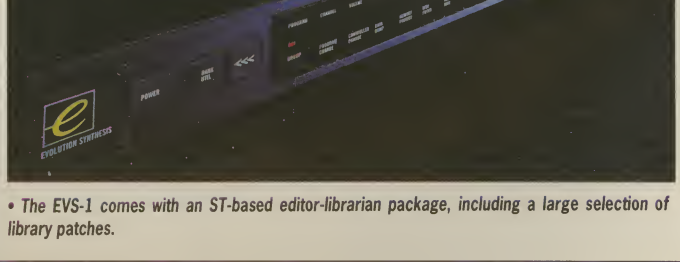
The EVS-1 costs £299 from all good music equipment suppliers, or talk direct to Sound Technology PLC on 0462 480000.

...AND ALL THAT JAZZ

If the above items concerning music making on the ST make little or no sense to you, don't blame it (entirely) on my limited communication skills.

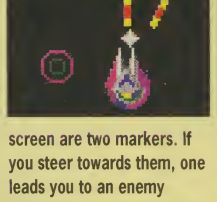
Music is perhaps the most jargon-laden aspect of Atari usage, at least partly because its potential is so vast that a whole new language is needed to explain it. So if you're baffled but interested, why not get your hands on the next issue of *ST Format* (available Thursday 14 June), which has a free demonstration cassette showing just what can be done on an ST, together with a detailed explanation inside the magazine. And of course there's a feature in this copy of *Express* on page 53 which will help you to get things clear.

Steve Carey



• The EVS-1 comes with an ST-based editor-librarian package, including a large selection of library patches.

ST GAME of the WEEK — PHOTON STORM



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The trouble with space is that it's traditionally black and boring. That is until Jeff Minter gets his hands on it. He's renowned for producing some seriously psychedelic colour schemes and in *Photon Storm*, he's gone wild again.

The game is in the popular *Oids* vein. Here, you control a small spacecraft and you must steer it through a starfield. As you wander along, aliens hurtle towards you from all directions and these need to be shattered from the screen. The avowed object is to pick up globes of plutonium, though the game is really a non-stop blast.

Jeff Minter's influence is obvious when you see the countless types of aliens. They are all brightly coloured and some move so quickly that you need to watch an on-screen scanner to get an idea of who's heading your way. The scanner shows all the aliens in the vicinity. As they draw nearer this display is magnified.

Also located on the screen are two markers. If you steer towards them, one leads you to an enemy Battlestar and another takes you to the Stargate. Plutonium is found in some spacecraft and if you pick up enough, the Stargate opens and you can pass through to the next level. At this point you use the mouse to steer carefully through a hole in the stars.

***Photon Storm*'s huge bonus point comes in the method of control. The steering on many *Oids*-style games has made them difficult to control, especially when a kaleidoscope-full of aliens start appearing. In *Photon Storm* you can shoot forward in one direction and blast in another. To command these options, the game is entirely mouse-controlled. By pressing the right mouse button you immediately accelerate and a tap on the left mouse button sends out the lasers. Since you have unlimited weapons, you can tackle all the alien dross with your finger constantly on the right mouse button, though the screen can become confusing.**

There is certainly nothing new about *Photon Storm*. There have been so many professional and PD versions of *Oids*-type games that there's little that can be done to improve them. Nevertheless, the magic touches are Jeff Minter's colourful graphics and the control method.

It's these which make it one of the most absorbing and frenetic games in recent months.

Mark Higham

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THE SHOPPING EXPRESS GUIDE TO PC ESSENTIALS

The PC has an enormous range of high-quality software available for it, but the choice can be bewildering. Read on to discover the Shopping Express guide to 50 indispensible programs

There's probably more software for the PC than for all other machines put together, so a comprehensive list is clearly impossible. Choosing 'the best' fifty programs is impossible too – it depends on what you want your PC to do. But here's the *Express* list of the 50 programs we think should be at the top of your shopping list. Word processors, home accounts, spreadsheets, programming utilities... the list goes on and on. We've cut down our categories to include software that you can't afford to be without, at home or at work; the essential PC software.

We give what we consider to be the all-round best program or programs in each section, together with a brief description of each, and a few highlights and drawbacks. There's also the availability details, though as ever, check the mail order ads in Shopping Express first. You're sure to find some excellent discounts available.

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▲ Powerful mail merger
▲ Powerful macros
▲ Loads of extras – calculator, word counter etc
▲ Two file editing

▼ No real graphics capability
▼ Not good at handling complex layouts

VALUE FOR MONEY ★★★★★

● TASWORD

£50 • Tasman Software • 0532 438301

Superb value and fast. A few odd limitations but an excellent basic word processor. *TasSpell*, the spell checker, also available, along with *TasRes*, the memory resident version of the processor.

▲ Memory resident and fast
▲ Easy to customise
▲ DOS shell macros
▲ Word count, notepad features etc

▼ Clumsy text insertion
▼ Some limitations – find and replace won't accept spaces, blocks must be whole lines etc

VALUE FOR MONEY ★★★★★

● CELEBRITY

£80 • Software Paradise • 0222 887521

A well designed word processor with a lot of extras and plenty of appeal for the first time user. It doesn't show the compromises usual with beginner's packages.

▲ Good clear command structure
▲ Calculator, calendar, DOS manager etc
▲ Thesaurus and spell checker
▲ Up to four text windows

▼ Thesaurus US and a bit slow
▼ Window dimensions fixed

VALUE FOR MONEY ★★★★

● MULTIWRITER 2

£115 • NewStar Software • 0245 265017

A very powerful package that includes many features usually found only on really expensive word processors. *WordStar* dot commands can be included directly in a document so this may be ideal for *WordStar* diehards. Lots of extras – author's utilities and a filing program, for example.

▲ *WordStar* compatible
▲ Good menu and context sensitive help
▲ Extras: contents and index generator etc
▲ Filer utility

▼ Filer awkward to use

VALUE FOR MONEY ★★★★

● BORLAND SPRINT

£199.95 • Borland • 0734 320022

A hugely powerful word processor – certainly worth looking at if you need the complete works. Breathtakingly fast with an auto-save feature that means even if the power goes your document has been saved exactly as it was at that moment. Comes with front ends that make it look like *WordStar*, *WordPerfect*, *MultiMate* or Microsoft *Word* if you're used to those packages. A bit complicated to use though and modelled on C, which doesn't help.

▲ User interfaces for *WordStar* etc
▲ Thesaurus and check-as-you-type spell checker
▲ Cross-referencing
▲ Very powerful indexing facilities
▲ Laser and PostScript support

▼ Very complex to use – only get it if you really need all the power
▼ Still a few little bugettes

VALUE FOR MONEY ★★★★★

● MICROSOFT WORD

£395 • Microsoft • 0734 500741

Another of the heavyweights. Packed with every feature you can imagine, but you're paying for it. Easy and intuitive to use for such a high-powered package – ideas outliners, contents/ indexing and footnotes, very good graphics facilities – and of course it runs under windows and OS/2.

▲ All the heavyweight features:thesaurus, spell checker, author utilities
▲ Ideas outliner
▲ Good graphics import facilities
▲ Runs with windows and OS/2
▲ Easy to use

▼ Very pricey
▼ Need a powerful machine – slow unless you have a 286 or 386

● WORD PERFECT

£250 • Sentinel • 0932 231164

Supposedly the biggest selling word processor on the PCs. A huge program with everything you could ever need: thesaurus, spell checker, two column text, footnote and index generation, automatic date insertion, end notes, mathematical symbols etc etc etc. Frankly though a disappointment for the huge price; only any use if you're already committed to the program because of training – or if you can get it on expenses.

▲ Everything you could ever need in a word processor
▲ Exemplary manual
▲ Available on minis, mainframes as well as micros

▼ Vastly expensive
▼ Some very complex keystrokes for functions – must be learned by rote

VALUE FOR MONEY ★★★

● CHIWRITER

£92 • Shareware Marketing • 0297 24088

The word processor for scientists. Originally a shareware product, this word processor lets you design and use predesigned fonts for scientific use. Can cope with any mathematical symbols – even the most complex integrals for example. The most impressive WYSIWYG you'll ever see! Might be worth hanging on a couple of months for the PC version of *LocoScript* though, which will no doubt outperform *Chiwriter* for less money.

▲ Handles any maths – integrals, complex set theory symbols etc
▲ Does foreign characters too
▲ Footnotes and font designer

▼ Limited as a word processor: no mail merge, word count only after spell check
▼ Only one document at once
▼ Hidden extra costs for hi-res or screen

VALUE FOR MONEY ★★★

● TOPCOPY PLUS

£109 • Innova Software • 0453 835379

Big brother of *Topcopy* – a very powerful and well-featured word processor. Verging on the 'big league'. Very fast – memory resident – and keeps everything reformatted as you go. Multi document

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Mannesman MT 81 Dot Matrix.....£115
Mannesman Sheetfeeder.....£62
Mannesman Serial Interface £49

REPAIRS FOR AMIGA AND ATARI

handling together with the speed of operation makes it ideal for people who shunt text around a lot. good spell check and mail merge too.

▲ Memory resident
▲ Can import text from defined areas of underlying screens
▲ Auto reformats but still fast
▲ Three files on screen at once, handles up to six documents
▲ Spell checker and mail merge
▲ Very fast

▼ One or two useful commands missed (eg. swop letters)
▼ No auto backup of files

VALUE FOR MONEY ★★★★

● GALAXY

Shareware • Advantage/PDSL • 0242 224340/ 0892 663298
One of many shareware word processors that resembles *WordStar*. Doesn't compete with ones you pay a hundred quid for, but for the price you get a usable program ideal for occasional use.

▲ Menus
▲ Spell checker
▲ Bargain price

▼ Restricted power – best for occasional user

SPREADSHEETS

Probably one of the primary uses for PCs, the spreadsheet is the staple of the small business user and some of the best around are available for the PC.

●VP PLANNER PLUS

£172 • Paperback Software • 0245 265017
Fully featured, Lotus *1-2-3* compatible spreadsheet generally held to be the ultimate in PC spreadsheet programs. There's support for a mouse as well as multi-dimensional financial modelling.

▲ Comprehensive
▲ Complex modelling can be achieved
▲ Reasonably priced (there's a cut-down £115 version too)

▼ Difficult to learn
▼ Hard drive and printer required

● LUCID 3-D

£91 • PCSG Inc./Software Paradise • 0222 887521
Cheap spreadsheet from PCSG lacking graphics but with the ability to perform most of the necessary functions. There's no 'minimum hardware' requirement and it's cheap. Also features 3-dimensional linking of cells from different spreadsheets.

▲ Cheap
▲ Linking of separate spreadsheets
▲ No minimum hardware requirement

▼ No graphics

● THE TWIN

£67 • Mosaic Software • 0604 830496
Cheap 'n' cheerful spreadsheet that is the younger sibling of the outrageously named Legend: Twin Level III. The Twin is an almost exact copy of Lotus *1-2-3* at a fraction of the cost of that eponymous program. Well worth 67 quid.

▲ Cheap
▲ All of the features of Lotus *1-2-3*
▲ Powerful graphics

● LEGEND: TWIN LEVEL III

£207 • Mosaic Software • 0604 830496
The spreadsheet that sounds like an adventure game. Burrow deep into the powerful Lotus 123-like features such as 3-dimensional cell linking, graphics and database functions.

▲ 123 features provided
▲ 3-D cell linking
▲ Powerful

▼ Not for the spreadsheet novice

● PC-CALC PLUS

£57 • Shareware Marketing • 0297 24088
Cheap basic shareware spreadsheet that is nonetheless good quality. All necessary spreadsheet functions implemented. You can get a version of this spreadsheet complete with – cut-down – manual for five quid from PC user groups. Full documentation will require registration with Shareware Marketing and the handing over of the full price.

▲ Cheap, cheap, cheap
▲ Easy to learn
▲ Available from user groups

▼ Basic

DATABASES

Everyone needs a database. From business use such as motor car parts, baked beans stocks and can opener suppliers to home uses such as stamp and record collections and train number cataloguing.

● DBASE IV

£595 • Ashton-Tate • 081-5699768
The database that's got it all. Spawned a huge range of clones for many other machines. Complex and all reaching, dBase is a database-specific programming language that allows you to build filing programs tailor-made.

▲ Complex
▲ Can be tailored to suit individual needs
▲ Industry standard

▼ Expensive
▼ Not for beginners

● DBXL 1.2 DIAMOND RELEASE

£115 • Software Paradise • 0222 887521
dBase clone featuring all the abilities of the original with a better text editor, variable arrays and user defined functions at an affordable price.

▲ Cheap
▲ Very powerful

▼ Difficult to master
▼ Not for beginners

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▲ Fully featured
▲ Easy to use
▲ Cheap

● HYPERPAD
£114 • Software Paradise • 0222 887521
Apple Macintosh users have long had the opportunity to use the definitive associative database handling of *Hypercard* based on the concept stacks of interconnected cards each containing various data, programs etc., all accessible via a serious of icon 'buttons'. And now, at last, this power is available to the humble PC user with Software Paradises *Hyperpad*. All the features of the original system are here.

▲ Comprehensive
▲ Easy to use
▲ Moderately priced

▼ Setting up may confuse absolute beginners

COMMUNICATIONS

Got a yen to communicate with your fellow PCers? Need to transfer data around the planet? Maybe you want to connect several computers together to maximise your peripherals?

● THE $25 NETWORK
£25 • EQ Consultants • 0334 84248
Networks abound at the moment but you'd be hard pushed to find one that would set you back less than several hundred pounds, before, that is, the release of The $25 Network from EQ Consultants. For the tiny figure of 25 quid (EQ alas, hold no stock in exchange rates) you can join two PCs in perfect harmony, to have and to hold, from this day on...

▲ Amazingly cheap
▲ Everything you need (except a cheap null modem cable)
▲ Easy to use

● CALLBOX
£171.35 • Callbox Ltd • 0600 4478
A program which takes control of your telephone allowing you to perform all manner of snazzy dialing functions, number recalls, auto calls etc. All this for only one hundred and seventy one pounds, wow!

▲ Cheaper than equivalent hardware (i.e. telephone)

▼ Breath-takingly expensive
▼ Only for those without the energy to dial a number

● LINK MASTER
£19.95 • Amstrad Software • 0277 230222
Billed as the 'complete kit for file transfer between two PCs' thereby implying a hard/software cast of thousands, Link Master is a cable and bit of software for £20 that allows you to transfer files between two PCs. Why not just use floppy disks? Or, perhaps that would be asking just a little too much (perhaps it wouldn't)

▲ Cheap
▲ Easy to use

▼ Superfluous
▼ Unnecessary (unless you have machines with wildly differing drive formats

● PROCOMM PLUS
£59 • Shareware Marketing • 0297 24088
Fully-featured general purpose communications program for use with modems. The program supports the industry-standard Hayes command language and seven file transfer protocols. There's an earlier version known as Procomm which can be had from the same supplier for a few quid.

▲ Reasonably cheap 'n' cheerful
▲ Hayes compatible
▲ Plenty of file transfer options

ACCOUNTING

The serious side of the PC. And let's face it, if you've spent the enormous sums necessary to buy the computer system, your going to need to save money somewhere.

● MICROSYSTEMS
£454 • Multisoft • 0420 85572
Very powerful accounting package emanating from well-known accounts software writers Multisoft. Menu driven programs ensure ease of use and give access to virtually every possible accounts function necessary. There's some extremely good help screens too in case you should encounter difficulties.

▲ Menu driven
▲ Fully featured
▲ Easy to use

▼ Too expensive for the home or small business user

● A-B-C
£299 • A-B-C Systems • 081-661 0488
Quality accounting package that has the distinction of sporting a word processor, database and spreadsheet as well as the accounting module. All the features of a professional accounts application are built into A-B-C as well as good after sales service and help.

▲ Built-in word processor, spreadsheet and database
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▲ Can be used on single disk systems

▼ A little expensive for home users

● PENNYWISE
£50 • Buzzz Software • 0865 56083
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▲ Powerful
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▲ Can used on single drive systems

▼ A little overpriced

GAMES

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● 688 ATTACK SUB

£29.99 • Electronic Arts • 0753 46465

Send a mass of Eastern Bloc seafaring metal to Davy Jones' locker. Alternatively, take command of Soviet Russia's latest submarine and go fascist hunting. Either way, this game provides everything necessary for superior submarine simulation. Ahoy m'heartys.

▲ Wonderful graphics
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▼ Expensive

● FLIGHT SIMULATOR 3

£52 • Microsoft • 0734 500741

The latest in a long line of definitive flight simulators from MicroSoft for the PC and its compatibles. This program has it all for those looking for quality simulation rather than blood 'n' guts. Expensive, but then the best always costs more. Invest a few quid here.

▲ Super graphics
▲ All controls found in a real aircraft are simulated
▲ Lots of places to fly around, through, up and over.

▼ Expensive

● ELITE

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▲ Old faithful too good to be missed
▲ Wonderful graphics
▲ Fast

▼ Expensive (the eternal PC games criticism)

● F-19 STEALTH FIGHTER

£39.95 • MicroProse • 0666 504326

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▲ Complex
▲ Good graphics

▼ Expensive
▼ A little boring in the early stages

● INFOCOM ADVENTURES

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● TETRIS

£19.95 • Mirrorsoft • 071-928 1454

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PCW9512 Multistrike Films	2746MS	B
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DMP 4000	2426	D
LQ3500	2741LL	C
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Brother M1009/1109/1209	2412	C
Commodore MPS-803	2412	C
Canon PW1080A	2223	C
Citizen 120D/180E/LSP-10	2488	B
Citizen MSP-20/40/50	2477	C
Citizen HQP-45	2478	E
Epson FX/MX/RX-80	2273	B
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NEC Pinwriter P6+/P7+	2870	D
NEC P2200	2844	C
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Seikosha GP100	2317	B
Seikosha SL80	2741	C
Seikosha 500/550	2236	C
Shinwa CP-80	2698MS	C
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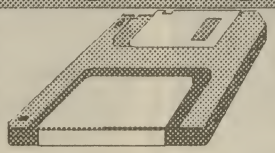

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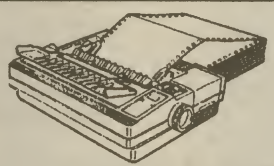

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VORTEX System 2000 installation disk for Amiga required. Mine won't load or run the partition program. Can anyone help? Phone 0634 371103 evenings.

WANTED Patch/Fix for Amstrad version of Reflex. Misunderstanding on purchase. Please make it run on my XT. Phone 0602 461303.

DISK based Amiga magazine. Send your pics, progs, tunes etc....Commission paid if used. Disks returned. Contact CEDM, 76 Hillhouse Avenue, Bathgate, West Lothian, EH48 4BB.

WANTED Atari ST contacts with view to forming local user group. Into Midi 2 graphics, also playing with fractals. Write: Steve, 398 Halifax Road, Grenoside, Sheffield.

AMIGA contacts wanted. 100% reply. Latest stuff. Send disks/lists to: Maxl, 16 Broadford Crescent, Ballinteer, Dublin 16, Ireland.

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AMIGA user looking for Amiga contacts. Reply to Ian, 211 Verity Crescent, Canford Heath, Poole, Dorset, BH17 7UA. Beginners and user outside UK welcome.

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I would like to get in touch with Matthwe Aubury, author of TCOS for the ST. Andrei Ellman, Willem Pijperstraat 63, 1077XL, Amsterdam Holland.

URGENT need to get in touch with the Medway Boys. Write to Mark, 85 Woolfall Crescent, Huyton, Liverpool L36 2NF.

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REFERENCE "Calling all Hackers" issue 76 whats the address? Mine is Nick Blasbery, 31 Prospect Street, Caversham, Reading, Berks. Reply will be treated in confidence. Regards.

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NEW Amiga disk Fanzine, reviews, tips, demos. It's gonna be mega! SAE for details to Chris Jackman, 3 Albion Terrace, Lexham Road, Litcham, Kings Lynn, Norfolk PE32 2QQ.

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WOKING computer group meets every Saturday at 6pm. St Mary of Bethany Church, Mount Hermon Road. All machines welcome! Please contact David 0483 763223.

ANYONE know of a user club for the Oric? Or where I can get one repaired? Steve – 53 Royle St, Northwich, Cheshire.

ATARI portfolio any user groups out there? Is so, please write to Nick Cheesman, 24 Cargate Avenue, Aldershot, Hants GU11 3EW.

STOS contacts wanted to form a PD development team, all welcome, no SAE needed, send details to, 10 Oak Drive, Portishead, Bristol, Avon BS20 8QS.

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C64 tape magazine starting up! Needs C-64 users. Contact RDJC, 23 Melmount Gdns, Strabane, Co Tyrone N Ireland BT29 9EB.

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AMIGA and ST contacts wanted to start user group. Please write to Mr Casey, 32 Harding Road, Stoke-on-Trent ST1 3BQ.

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AMIGA hard drive wanted. Any considered. Ring (0392) 430246 or write to: Mr B Lad, 3 Waverley Avenue, Exeter, EX4 4NL.

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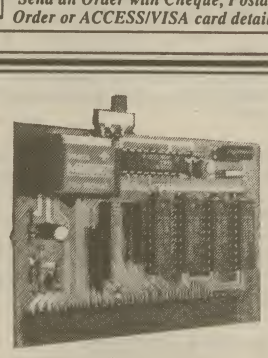

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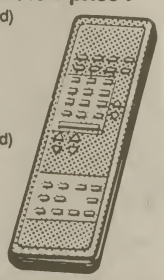

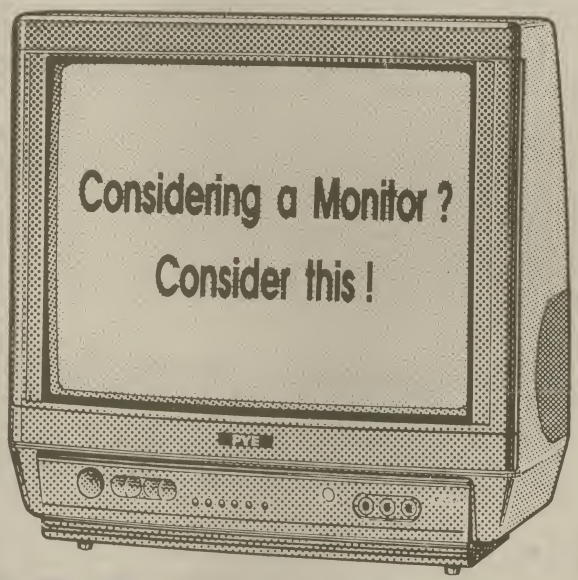

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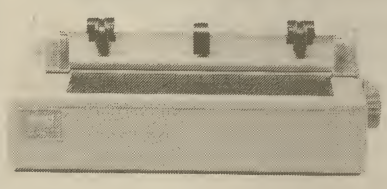

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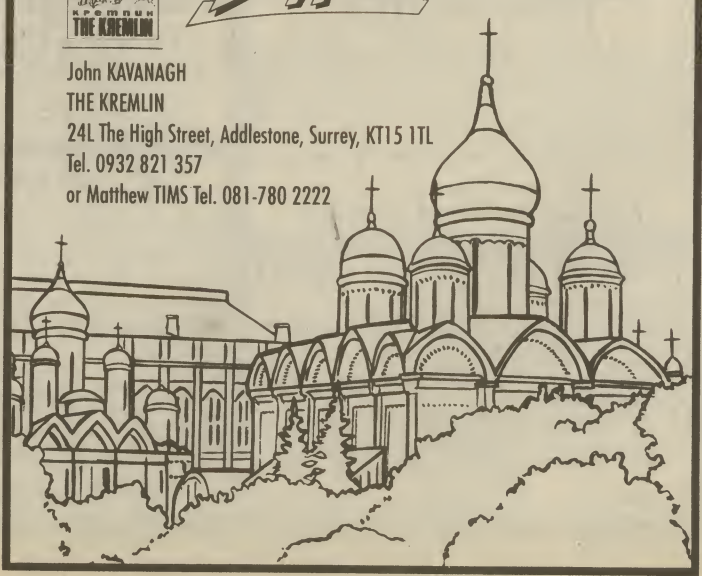

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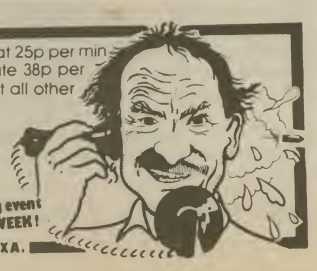

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THE PD COLUMN

There is a lot of software out there available for the price of a disk. Our weekly column by Jerry Glenwright explores the world of the public domain.

A couple of small-time libraries have written to me touting their wares and attempting to get gratuitous and free mentions – what the hell, I'm feeling generous...

Free-Ed Shareware and PD is the unlikely, unimaginative, yet entirely factual name of T Jones's library of PD and shareware catering for the educational, disabled and clerical (as in 'the clergy') market. The stuff's free, but you supply the disk (up to a maximum of 10 programs per disk). Unemployed? T Jones will listen to your story and if he or she considers it to be worthy, you'll be allowed to get your hands on the goodies – sounds rather like some Dickensian story of little Twist applying for entry to the work house, right?

Still, if you're low on self esteem (and who wouldn't be after 10 years of... oh, get on with it), perhaps you should slip Jones, T, a disk. Free-Ed resides at 85 Stoke Road, Taunton, Somerset TA1 3EL. Unfortunately, Jones didn't tell me which machine(s) his/her library supports – ah well...

Timo's PD is the next 'little man' library to be featured. His claim to fame is cheap Amiga disks of software (£1.40 to be exact). Bung your cash to 10 Valentine Way, Chalfont-St-Giles, Bucks HP8 4JB. At least Timo actually offered to pay to get a mention (did I accept?)

Gazza Stimpson of the Plus 3 User Group accused your PD columnist of a 'no 8-bits' policy. Take a look at the CPC, CP/M and Atari 8-bit entries, Gazza. Am I in the clear? Meantime, while he eats his words, make him feel better by cutting along to the post office with your 'tiny amount' (apparently the price Gary charges for his PD) and send it to him together with a request for a Spectrum disk of PD goodies. Address? 4 Fox Covert Drive, Roade, Northants.

And now on with this week's entries.

ATARI ST

Do you remember which machine was claimed to be able to run a nuclear power station? Whose 'inventor' had the epithet 'Uncle' attached to his name, and who was touted as being the saviour of British industry? The man was Clive Sinclair and the machine the dear little ZX81, of course. The microcomputer that put the word 'home' into computing. Before the ZX81 you'd have needed a fat wallet or rich, but recently deceased, relative in order to afford a computer to run at home. With the introduction of the ZX81 everyone could afford to compute.

Thrills and spills as intrepid home computer owners went where no computer owner has gone since – into the shadowy underworld of having a machine equipped with just 1K of RAM! But if you asked anyone who was around at that time, they'd say that the computer scene was fun-filled and enjoyable. That a camaraderie formed itself around the little machine which simply doesn't exist for today's home

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enthusiasts. Nostalgic? no need be, for a ZX81 emulator has just been released into the public domain which enables STers who missed the machine first time around to experience the thrill of leading-edge programming and give old timers a taste of what they're missing in the harsh world of 1990.

Originating in Germany (where else?), the ZX81 emulator includes a full bit image of the machine's ROM, which means that it will run just about everything you can throw at it – including all those old Tim Hartnell and Ian Sinclair *5,001 Programs for the ZX81* programming books. The emulator comes with a variety of software ported onto ST disks including *3D Maze, Galaxians* and so on, and an assembler and disassembler.

What total, utter and complete enjoyment.

AMSTRAD CPC

And now a return to the present with a trio of tremendous treats to whet your gaming appetite. Hands up those of you who wouldn't know which famous board game involves property trading and money grubbing? I thought not. Everyone's heard of it, almost everyone's played it and now it's available for a CPC near you. *Nomopoly* (no use incurring the wrath of Waddingtons with a direct port of the name too, right?), is a full graphics implementation of the hardy perennial featuring play against a computer or human adversary, on-screen dice and scoring, and the ability to perform little cheats such as nudging the dice if you're about to land on an opponent's Mayfair or Park Lane. Fun to play and thoughtfully programmed.

Not quite as popular as *Nomopoly,* but no less of a gaming geriatric is backgammon. Strategy is all in this simple to learn but exceedingly difficult to master board game.

The CPC version features a full screen representation of the board which is quite excellent and the computer's responses are fast even when it's calculating blots and doubles. Play the computer, a friend or watch the CPC play with itself.

And finally, the game everyone, even the hardened arcade-ophobe, loves to play – *Invaders.* Not PD, but incredibly cheap on a WACCI Home-Grown disk, invaders incorporates the necessary elements of smooth graphics scrolling, impeccably-drawn invaders, sexy spot effects, a high score table and wave after relentless wave of tick-tocking aliens marching irrevocably down your screen.

Boot up *Invaders* and the primeval urge to annihilate will soon make its presence felt... ■

WHERE TO GO...

Many PD libraries advertise in Shopping Express, but these are also worth a look.

ATARI ST

• Goodman Enterprises, 16 Conrad Close, Meir Hay Estate, Longton, Stoke-on-Trent ST3 1SW. The Goodman library is one of the best, with all the latest PD always in stock – and Mike Goodman is a friendly guy, always willing to chat!

• Page 6, PO Box 54, Stafford ST16 1DR. Page was one of the first PD libraries and ranks with the best. The company also stocks a wide range of Atari 8-bit PD.

CP/M

• The CP/M User Group, 72 Mill Road, Hawley, Kent DA2 7RZ. Help, advice and more PD than you can shake a stick at.

COMMODORE AMIGA

• George Thompson Associates, Dippen, Brodick, Aran,Scotland KA27 8RN. GTA stocks a variety of products for Commodore's baby and has an excellent PD library.

• Softville PD Service, Unit 5, Stratfield Park, Elettra Avenue, Waterlooville, Hampshire PO7 7XN. A comprehensive library which also stocks ST and PC PD too.

AMSTRAD CPC

• Wacci UK, 9 South Close, Twickenham TW2 5JE. Bung a couple quid in the post for a latest copy of the *Wacci* fanzine (a very good read...) plus comprehensive lists of PD.

• DW Software, 62 Lascelles Avenue, Withernsea, North Humberside HU19 2EB. The source of *Desk* and many other remarkable PD programs all written by DW himself!

PC AND COMPATIBLES

• Public Domain Software Library, Winscombe House, Beacon Road, Crowborough, Sussex TN6 1UL. The first in the UK.

• Seltec Computer Products LTD, Northumberland House, Staines Business Centre, Gresham Road, Staines, Middlesex TW18 2AP. Seltec stock a large range of quality shareware.

APPLE MAC

• The Macintosh User Group UK, 55 Linkside Avenue, Oxford OX2 8JE. A users group? Yes! PD library? Yes!

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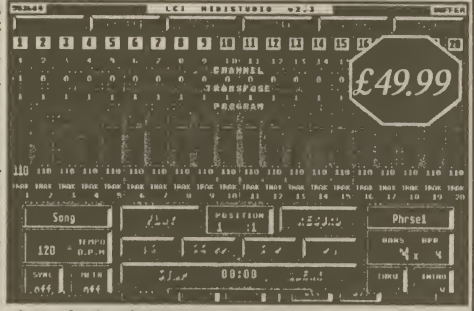

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THE ATARI ABC

Now, there's a PC-AT compatible that not only solves problems like other AT compatibles, it also solves the one problem that its predecessors have created ... affordability.

Silica Systems are pleased to present the new Atari ABC. The ABC is a 286 AT compatible that runs at over 5 times the performance of the IBM XT. This is achieved by combining the power and speed of a 16-bit 286 processor, with Atari Corp's development experience and engineering capabilities, which use the very latest in design technology. However, the Atari ABC's are available at 'XT prices' and many XT owners will wonder why they paid more, but got less!

The ABC is a reliable, high performance computer, built to exceptionally rigorous standards. It is well designed, to a state of the art specification, maintaining maximum expansion capability for the future. This includes up to 4Mb of RAM and 3 AT expansion slots. Plus, unusually for a PC at this price, the ABC has the ability to install two or three extra drives, with the cabling already inside the CPU.

The ABC has a host of impressive features, all built-in as standard, encouraging simple installation and ease of use. In addition, the ABC's small footprint and quiet operating, mean that you will notice it less on your desk than other PC's. Except, of course, when you begin to take advantage of its AT power.

At its remarkably low price point, the ABC is ideally suited for home, office and educational use and will take full advantage of the vast range of PC compatible software. And, with 12 months FREE on-site maintenance (8 hour response), you can rest assured that your ABC will be fully supported.

The ABC is the latest addition to a comprehensive range of both 286 (8Mhz or 12Mhz) and 386 (16Mhz and 20Mhz) PC's, from the Business Systems Division of Atari Corp. Atari's PC range offers an unsurpassed combination of reliability, compatibility and expandability, with unique features like Atari's 44Mb removable hard disk on their PC4. Return the coupon NOW for further details of the complete range of PC products from Atari's Business Systems Division.

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AVAILABLE: JUNE 90

To put the ABC even further ahead of the competition, we have introduced a special 'Turbo' version, which includes a super fast RLL hard disk controller to increase the data transfer rate from 150KBytes/s to 800KBytes/s, with a performance index of 4.801. Plus! to provide exceptional graphics with an outstanding colour resolution of up to 1024×768, we have included a Super VGA graphics adaptor and a 14" VGA colour monitor (which also supports 1024×768 resolution), all for an additional price of only £300. Check the ABC Turbo against the competition, at only £1299 (+VAT) with 30Mb hard disk, Super VGA colour graphics capabilities, plus 12 months on-site maintenance, it offers unbeatable value.

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COMPUTER CHAOS

A selection of computers which perpetrate disasters from the copious annals of Mel Croucher

SAN DIEGO, CALIFORNIA

James Conrad is hired by the US Government as a technical contractor. He decides to shortcut the official system and sends some data to a computer in Virginia via the public telephone system. Five security agencies go Grade-A Alert, but refuse to comment on the incident because the data is 'sensitive'. This is something of an understatement: the information that anyone can intercept by picking up a crossed wire consists of the State-of-War routes for USAF bombers and launch codes for their nuclear missiles. *(Washington Post)*

MANCHESTER, ENGLAND

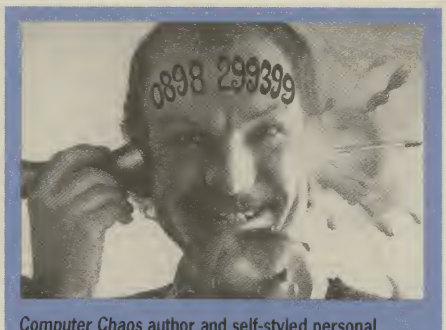
Seven women are processing data after hours, in a third floor office. A fire starts in the chippy on the ground floor and rapidly rises through the structure. The fire alarm works perfectly and instantly, the building has fire extinguishers on each floor and is lined with half-hour fire-resistant cladding. The fire brigade is summoned quickly and arrives pronto. All seven women are killed by the fumes given off by plastic casings in their computer room. The manager of the data bureau has ordered all doors to be locked 'to prevent accidents or vandalism to the computers.'

SAN FRANCISCO, CALIFORNIA

Title searches for commercial borrowers take about two weeks to conduct, so a $4.1 million computer system is introduced to scan the Uniform Commercial Code Division data in next to no time. Within one week each day's workload is falling behind by two and a half days, within one month the office takes on 100 extra staff to process the data, within one hundred days the backlog hits 50,000 searches. When the State Department orders the organisation to cut its losses it is discovered that both the original and the back-up systems have been junked by order of the same department. *(San Francisco Chronicle)*

MELBOURNE, AUSTRALIA

Peter Rogan waltzes into the local branch of the National Australia Bank to buy some Sri Lankan rupees for a business trip. Due to a programming error, the bank's computer declares that the exchange rate is 400 per cent more than it should be. Peter nips off to another bank and promptly raises $100,000 which he exchanges for cheap rupees at the National Australia, selling the whole lot to a third bank the following day at a profit of $336,000 (including commission). As soon as the programmer discovers the error the bank politely asks for its money back. Peter says get stuffed. The Australian Supreme Court backs this sentiment, declaring that Peter can keep his winnings because he 'wasn't a professional'. *(New York Times)*



Computer Chaos author and self-styled personal computer industry cult figure Mel Croucher now has his own telephone fun line.

Each week Mel (pictured during a dramatic earwax cleaning exercise) can be heard presenting a new selection of humorous observations on 'Software, hardware, the industry and the people in it. Nothing and no-one are safe.'

ISLE OF WIGHT, ENGLAND

The merry tale of a student receiving a Poll Tax demand for several million quid is widely reported, but a much more sinister case has escaped the attentions of the national press. A Poll Tax demand for £340 has been sent to one member of a Ryde household after its youngest occupant dutifully fills in the family registration form. It remains to be seen whether the Council will prosecute when 'Sooty Bear' fails to stump up the cash. *(The Hampshire Chronicle)*

Win one of ten great PC mice

Welcome to week two of our special summer series of Just the Word competitions. Last issue we offered Amiga, ST and Amstrad PC owners the chance to win a natty Nakshe mouse for their machine – this week it's the turn of the non-Amstrad PC.

The Naksha Serial-PS/2 mouse is a three-button beastie which comes with all the connections required to run on any PC with a 9-pin or 25-pin serial port or dedicated pointing device port.

The 'ultra-high' resolution (420dpi) device features the same positive button action which has earned its sibling rave magazine reviews, and is guaranteed to work with any mouse-compatible software.

But there's more – because the Naksha Mouse comes with a software utilities disk featuring *MenuMaker* – a generator which allows pop-up menus to be added to your existing text-based software – and pre-defined menus for applications such as Lotus *1-2-3*.

And to top the package off, the murine marvel also comes with the presentation software *Deluxe Paint II-PC* bundled, plus unlimited technical hotline support. The Nakshe Mouse costs £49.99 plus VAT, but one could be yours for the price of a postage stamp if you can answer one simple question correctly.

Somewhere in this issue of *Express* – either in the editorial or in an advertisement – is the word TEXTILE. All you have to do is find that word, go back to the previous sentence and write the final word of that sentence in the space on the answer form.

Fill in you name and address and send you entry to Serial Competition, *New Computer Express*, 30 Monmouth Street, Bath BA1 2AP, to arrive not later than Monday June 4.

The first ten correct entries out of the hat will be the winners, and the editor's decision is final.

NAME .....

ADDRESS .....

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The final word in the sentence before the one containing TEXTILE is.....

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Portfolio also includes several functions that you would not expect - a spreadsheet for your personal budget and expense records, as well as a text processor for typing memos and letters.

And, because Atari's Portfolio is PC compatible, it can communicate with your desktop PC at home, or in the office. You can transfer files from one to the other, to enable you to update your reports and figures with the Portfolio while you are on the move.

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SPECIFICATION

- ★ ***Processor:*** Intel 80C88 at 4.9152Mhz.
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- ★ ***Internal ROM:*** 256K containing BIOS, operating system and applications suite.
- ★ ***RAM:*** 128K with an internal RAM disk, configurable from 8K. Externally expandable to 640K RAM.
- ★ ***Keyboard:*** 63 keys, QWERTY, IBM PC BIOS compatible. Buried numeric pad and function keys. Optional key click.
- ★ ***Character Set:*** Extended IBM ASCII (255 characters).
- ★ ***Mass storage:*** credit card sized memory cards (32K or 64K or 128K RAM).
- ★ ***Display:*** Graphics LCD, supertwist technology, MDA compatible, 40 columns x 8 lines, 240 x 64 pixels (with the option to window a full 80 x 25 character display). Keyboard controlled contrast.
- ★ ***Peripherals:*** 60 pin expansion BUS to take serial and parallel ports and memory expansion units.
- ★ ***Size:*** 8″ x 4″ x 1″ (200mm x 105mm x 29mm).
- ★ ***Weight:*** 495 grammes (with batteries).
- ★ ***Applications:*** calendar and diary, address and phone book, Lotus 1-2-3 compatible spreadsheet, text processor, communications software.

COMING SOON!

In addition to the excellent software built-in to the Portfolio Free of Charge (see right), other software and peripheral products, such as the sophisticated Pocket Finance package and serial/centronics interfaces are available. And it doesn't stop there. Many manufacturers have recognised the potential of the Portfolio and have already started to design new peripherals and software. Products currently under development include: Serial interface with built in mini modem, Apple Macintosh interface, business, utility and programming software plus a range of adventure and battle strategy games. For further free details on the Portfolio range, fill in the coupon below and return it to Silica Systems now.

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To get you started, Portfolio comes with a suite of five useful functions built-in, all accessible from a simple menu display.

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For real calculating power, Portfolio has a Lotus 1-2-3 compatible spreadsheet built-in. It has 127 columns x 225 rows and reads/writes Lotus V1.0 and V2.01 files, so you can transfer data to and from Lotus 1-2-3 on your desktop PC. The Portfolio's 256K ROM includes MS-DOS and PC BIOS compatible systems software.

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POWER SUPPLY

Portfolio is powered by three AA batteries which will run for up to six weeks with normal use, or from the mains using an adaptor. All the peripherals take their power from the Portfolio, so no extra batteries or adaptors are required. A 'battery-low' warning and memory back-up ensure that information is not lost when the batteries are changed.

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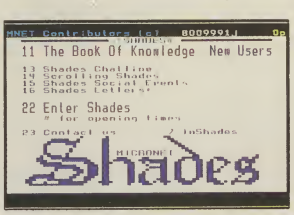

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Music

GET DOWN 'N' BOOGIE

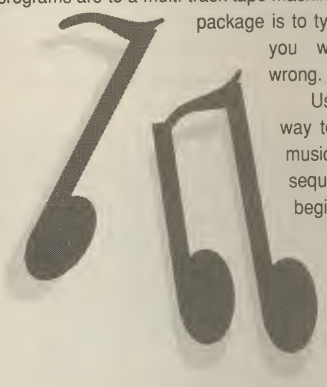
Over the course of the last seven weeks, Jon Bates has been making excursions into the musical world of various computers and associated software. Now comes the important bit; how to actually create music....

You've got your music software, hardware and possibly the odd MIDI instrument, and they have staked their claim to areas of your desk and shelf space. Now what do you do?

As you may recall, the main advantage of using the computer as a controller of music is the ability to manipulate pretty well any aspect of the notes that you play or write in. Unlike a cassette recorder you are not stuck with the concept of trying to get the perfect 'take' without mistakes. There is always time to dive into any particular sequence you have put into the computer and correct and alter bits.

You can also delete sections that don't work and move other sections of the music to fit.

If you stick with the idea that music sequencing programs are to a multi-track tape machine what a DTP package is to typewriter, then you won't be far wrong.



Usually the best way to start writing music on a sequencer is to begin with either a drum pattern, short bass line or chord sequence. My own method is to do several versions and then store them. You will not always play the same thing the same way twice and quite often you will be surprised by the way the sixth version you record sounds considerably different from the first.

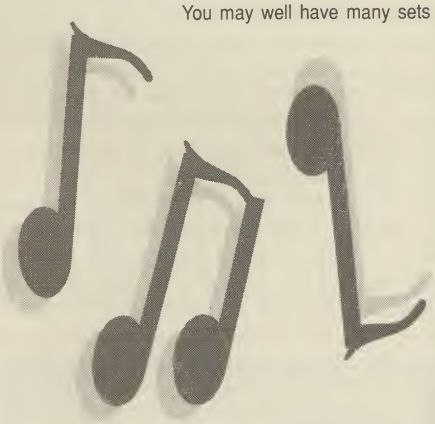
SKETCHPAD

At this stage the sequencing program is really being used as a sketchpad for ideas. I file ideas away and often forget about them for months until I have a little spare time to fiddle around and go through them. A piece filed away as 'Whizzo' says very little about the style or sound itself, so some sort of documentation is very helpful. Some sequencers have a drop-down notepad for making notes relating to the sounds you have picked. If not, maybe a notebook kept in the sequencing manual might help. The problem can get even worse if you are using libraries of different sounds for your instruments, because one library will be markedly different from another. Other problems, like using different drum machines, will also result in advanced audio lunacy – so some tidy housework here will save quite a lot of time.

If you are running a MIDI system with, say, a synthesiser and maybe a tone module, it is a good idea to be pedantic about what MIDI channels you use for each piece of equipment. If at all possible keep to the same channels for the same instruments; eg, drums channel 10, bass line channel 1, basic keyboard chords channel 2 and so on. This means that when you return to an old idea you are not faced with a fraught hour or two while you wonder why on earth the freakish sounds falling out of your speakers seemed so exciting at the time.

A good tip here is to put in the program number at the beginning of each track. Changing sounds is called 'program change' on the MID.I Just before you start to record the particular line, but while the sequencer is running in record mode, press the appropriate button on the synthesiser. The corresponding program number will be sent to the sequencer and recorded as part of the data. The same sort of rule applies if you are using a computer and its internal sounds – the Amiga and Archimedes for example.

You may well have many sets of sounds to load into the sequencing part of the program. Unless your software has the luxury of auto loading the correct sound set, try to make a note of the sounds you use. The first thing I usually put down is a metronome click. Even if I have no real idea of what sort of piece I will end up with, the old metronome click acts as a spur to jolly things along.



Creating a click track is very easy. Pick a percussion sound, say a hi-hat, and putting the sequencer in record mode, play about four bars worth of hi-hat as close to the main beats as you can. Before you play them back, select the quantise option.

Quantise is the part of the software that tidies up your timing discrepancies to within whatever accuracy you choose. Here I would pick a value equivalent to a crotchet – many sequencers use American music terminology and a crotchet equals 4. Such a value ensures that the playback of the click is smack on each beat. I chose to only put about four bars in because I can either copy those four bars forward a number of times or loop them round. It will depend on the software which option you take.

Let's suppose that you decide to build up a drum rhythm of four bars in length. If you are using internal sounds (Amiga/Archimedes) then you may well find that one drum sample will suffice for several, ➤

NOT A LOT OF PEOPLE KNOW THAT ...

...The Fairlight company, that Australian pioneer of the complete computer musical instrument, went bust over a year ago. It is rumoured that Roland has bought the rights to the name. Meanwhile back in the land of Ramsey Street, the cheeky chappies that used to own Fairlight have set up shop right next door to their old company.

...Its major rival, the Synclavier, now costs a cool $250.000. Owners of older Synclaviers are not at all impressed that the latest upgrades will not run on their instruments. Seems that the fun loving manufacturer also upgraded the operating system. It's tough at the top eh?

...Up-market samplers and direct-to-disk recorders have been boasting optical storage for some time, with many TV companies having had direct-to-disk recording as standard for up to five years.

...There are devices available which will 'listen' to the main beat of a drum track on tape, and then generate a time code to drive a MIDI system – altering the tempo in response to the drum track as it plays along. Jive Bunny, yer secret's out, matey.

...The FM Towns computer from Fujitsu has both FM synthesis and PCM sampled sound making it the most musical PC in the business. FM is the Yamaha method of generating sound and PCM is a way of digitally encoding real sound. Fujitsu has no plans to release this in Europe yet,

HOW TIRESOME

It is not always a good idea to quantise everything too precisely. The result can soon become boring because the human brain strives for variety in what it hears. A piece of music that is absolutely in perfect time can soon sound as interesting as pile drivers on a building site. If, at the other extreme, your timing is not all it should be perhaps you should go for a hybrid option.

Using a drum kit as an example, you could ruthlessly quantise the bass drum, hi-hat and snare, but leave the additional drums and percussion untouched – which will stop the beat sounding too accurate.

The best solution lies in the software. Many sequencers have quantise options than can be applied by degrees; you set it to 'capture' the notes played but allow for a margin of error. It doesn't take much practice to get used to the settings that suit your style. Even if your tracks are too mechanical, you can select a random option to give them a little more 'feel'.

Another factor that can contribute to the overall tedium of a music track is velocity – or rather the lack of it. Velocity is the degree of force with which you play a note, and which governs its tone and volume. Although there are some synths that do not respond to velocity, most do – and many sequencers have the ability to alter the velocity data. This means either squashing it flat for that hard, heavy but maybe dull sound, or exaggerating the velocity for a lively result. With a little practice you can have those hi-hats sparkling into life with accents and subtle changes in tone.

because at different pitches it will sound like a different drum. Whichever way you choose you will almost certainly start with a bass and snare drum track. It is easier to put them down in one go because the co-ordination and imagination required to do them separately is quite considerable.

You can build on this by adding a proper hi-hat track with perhaps the occasional open hi-hat to add variety. The metronome track can now be muted as you should have quite a solid pattern to work with and the click track will only serve to confuse the issue. It might be as well to leave the drum track alone at this point. You could put clever drum fills in but as the piece has not yet taken shape they could get in the way later.

The next stage is to select another instrument and another MIDI channel. The choice will be between either chords or a bass line. Chords often add more variety and, because that's the way I prefer to work, we will concentrate on them next.

The sound you choose for the chords will depend on the way you play them. Slow smooth sounds will almost certainly lead you to play the notes before the main beat of the bar. Hard sounds played quickly will almost certainly require quantisation. If the chord track is quite rhythmic then you will have to use quantisation to ensure that all the notes go down pretty well together.

This is not so critical with smooth sounds

that float along. With a computer sequencer you can always use the clipboard method, taking several versions and choosing the one you like at the end. With drums and chords established the next obvious step is a bass line. If it is a fast-moving piece you will probably need to phrase it with the drum pattern. Again, in the same way as with chords, the faster the bass line the more the need for the beat to be absolutely precise.

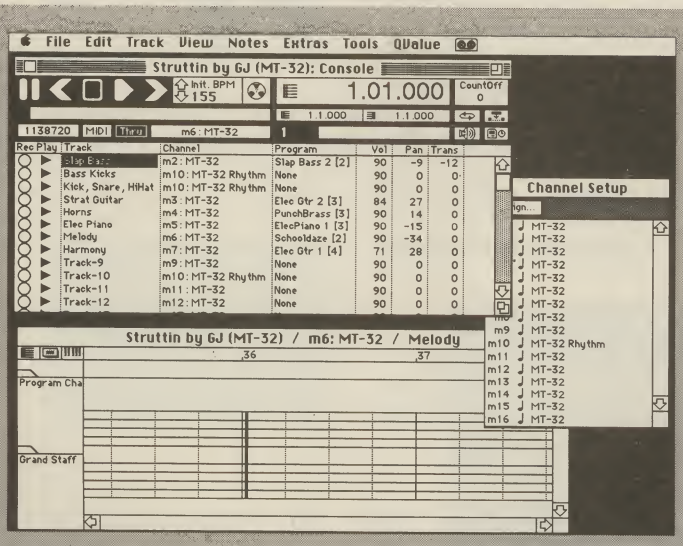
By this time you may still only have the germ of an idea for a melody line. Even if it doesn't make much sense at this point it is worth taking up an extra track to put the idea down. You can always mute that track for a while until the piece takes shape. So far we have created a short four-bar section. It doesn't really matter whether it ends up as the chorus, verse, intro or whatever at this stage, we can decide on that later. That is one of the joys of using a sequencer instead of a tape deck, in that any section can be ultimately placed anywhere within the piece, repeated or in some cases cut in half to fit any section of the final piece. To spice a piece up there is nearly always the possibility of transposing a section by putting it into another key.

This process can be repeated for the other sections in the piece. If you decide that the basic drum beat should remain the same throughout you can copy those bars from the first section and start all over again. You may well already have a plan for the piece, quite often music does fall into regular, formal patterns with a few little variations.

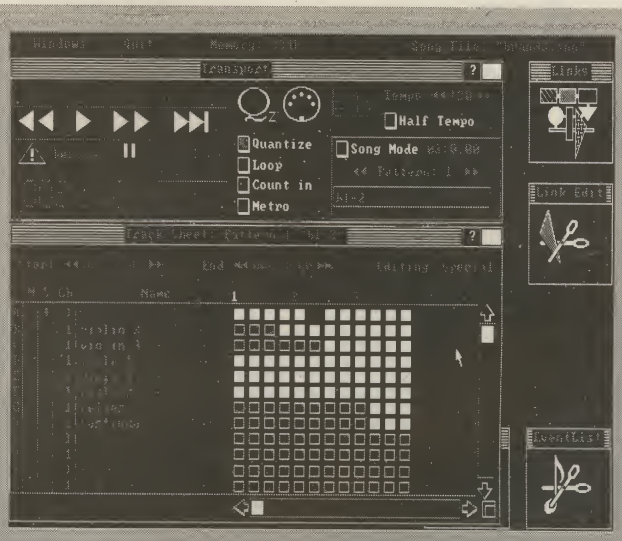
MAKING CHAINS

Another advantage of using a computer sequencer is the ability to switch off particular tracks. For example, you could choose to take out the bass and chords on one repeat of the section. Not all software is smart enough to remember this, but you can always mute the relevant MIDI channel at the appropriate time. My usual way of working is to link two or more short sections together into an arrangement – called a 'chain' or 'song' function depending on the software. I spend some time repeating the sections and trying different combinations. Often this will give me an idea for an introduction and a middle section as well. In fact I probably spend 90 per cent of the time 'fine tuning' the arrangement – adding things like additional percussion and the like – whereas the original ideas are put down very quickly.

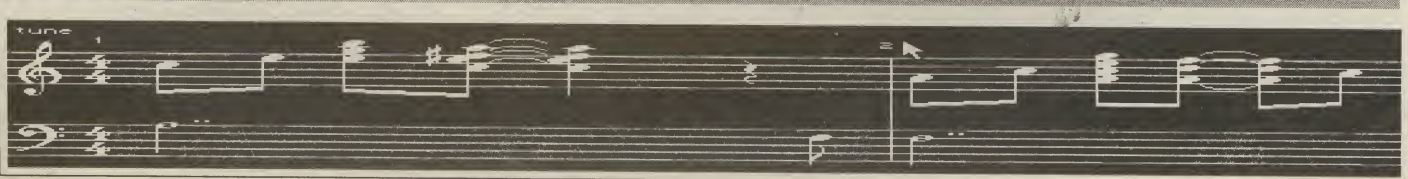
The final stage is to commit the whole thing to tape because it – and you – can become a bit of a pain when

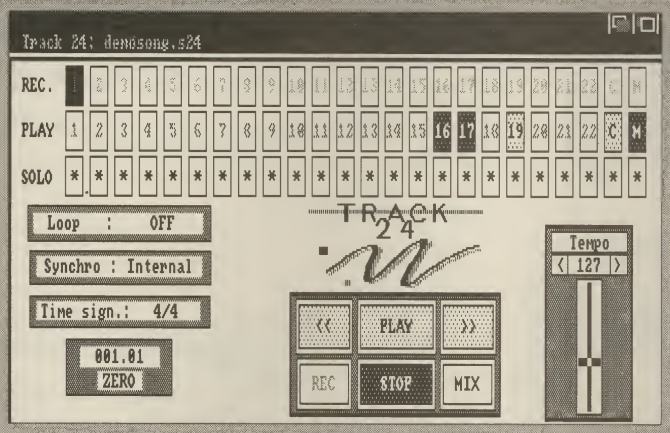

File Edit Track View Notes Extras Tools QValue
Struttin by GJ (MT-32): Console
1.01.000
Channel Setup
Struttin by GJ (MT-32) / m6: MT-32 / Melody
Program Cha
Grand Staff

• A typical example of software for the Mac is Electronic Art's Deluxe Recorder.

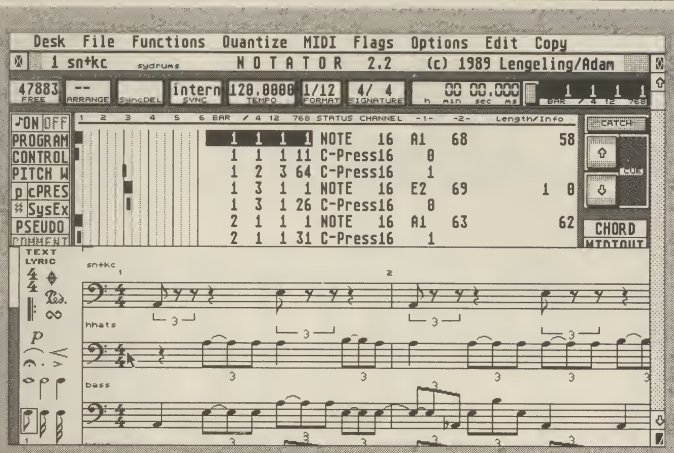


• Prism (Digital Music 0703 252131) allows simultaneous instrument sequencing.





• Track 24 *from Digigram, showing the main sequencing page layout...*



...and an example of full score editing in Notator.

you drag your friends round every time you want to impress them with your latest offering. Here the software can often help you by controlling the volumes of the separate tracks. Some of the more sophisticated software on the market provides a graphic representation of a mixing desk on screen and remembers the position of the faders at any point during the 'mix'.

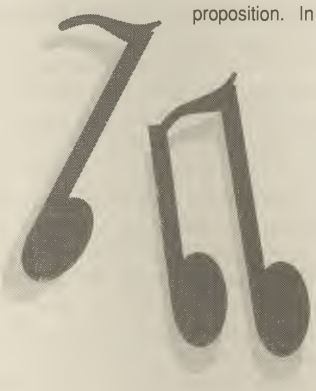
FUTURES

Sequencers already do more than just control the music. They have the sound-mixing facilities (mentioned earlier) and can also control other MIDI peripherals; like panning sounds from speaker to speaker; switching sound processors and effects units; varying the sustain; and even altering the sound the synth is playing.

These days effects units have MIDI ports on them, and some of the new software will control effects units from the 'mixing' page. Then there are multi-track recorders with MIDI ports that allow the sequencer to maintain control of the tape speed and automatically stop and start the tape.

Commercial studios have been using a direct-to-disk recording method for some time; the sound is changed into digital data and stored directly onto hard disk – or more recently an optical disk – and there is now a 12-track version of this. The big advantage is that you can display the sound, chop it up, repeat, loop, reverse, do anything you like with it and synchronise the whole shooting match with a tape recorder or video.

This is beginning to filter through to the home market and, although still pricey, will soon become a viable proposition. In fact, if



you already have, or intend to buy, MIDI sequencers and direct-to-disk recording, you can put them together and have one program that not only records and manipulates MIDI data – but also processes and manipulates digital sound. The complete studio in a VDU, in other words. Does that sound just a little far fetched? Well, if you can lay your hands on a Mac and a five figure cheque, all this really can be yours. The system is called Digital Audiovision (DAVE), it has been jointly developed by Digidesign and Opcode. More information can be obtained by calling TSC on 071-258 3454.

ENOUGH ROPE

In fact, give it a few years and a video, audio and MIDI sequencer package, complete with optical read/write storage and full multi-tasking for editing synths and displaying the video image, could very well become *de rigueur* in bedrooms like yours up and down the country. Machines that will give you enough rope to musically hang yourself several times over – all you have to do is to supply the inspiration and perspiration.

I hope this series has provoked a few thoughts, demonstrated that music on the computer is fun and inexpensive at the bottom end – and an outlet for the creative talent you always knew you had.

Finally, ST and Amiga owners might like to know that the July editions of both *ST Format* and *Amiga Format* will carry special features devoted to the subject of music, with lots of software on the cover disks – and a free audio cassette that shows you how a piece of music can be built up from scratch. ■

GETTING STARTED

If you have already bought your system and are looking at the world of music as an additional goodie, rather than the *raison d'être* for your purchase, there is no point in comparing the abilities of different computers here.

If you are shopping around however, the best advice is to be guided by the software available for the machine – and your own musical aspirations. For example, if you wanted to put soundtracks onto commercial videos, a Spectrum would not be the best machine – but the Speccy certainly scores if you just want to have fun.

If you have a decent sound chip and software, that can be your musical base camp. Failing that, you will have to go for MIDI. The cheapest way to get a multi-timbral sound device is to buy (perhaps second-hand), one of those single keyboards that have auto rhythms, bass lines and chords.

Provided it has MIDI ports you can nearly always use them to get drums, bass, chords and melody lines simultaneously. It also has a keyboard to play your ideas in, something which a tone module does not possess.

Both the sound chip and single keyboard will be deficient in the loudspeaker department. The easiest way round this is to cobble them up to a hi-fi system – which will also provide a tape deck. Maybe you could even get a separate hi-fi for your computer and music set up – not a bad idea since more and more games feature superior sound tracks and/or additional sound modules.

What else? If you can afford it, go for an effects unit that has a nice clean reverb. This gives depth and warmth to recordings although for the first few weeks you will tend to swamp everything with reverb. Alternatively try for one of the sound modules that has reverb built-in – with a few other effects besides.

Once you start getting into the tone-module league, you will want to store your favourite sound combinations and maybe even your own sounds. Even more financial power will be need because you are now getting into sound editing software. This will store all the sounds and present you with a nice screen of sound controls to create your own sounds with ease. If you ever get to this stage you will be totally hooked on sound.

The other route is to stay with the internal sound chip, but to get heavily into programming – perhaps with the intention of writing music to sell to games software houses. Magazines often publish short routines that will control the sound chip, and the PD market has sound chip programs that can deliver the goods in the form of a data file.

REGISTERING A PROTEST

Three years after the Data Protection Act started looking after our computer files, Colin Campbell talked to Eric Howe, the man who ensures that data held about individuals is not mis-used.

The Data Protection Act has been in force now for three years, but as yet only a handful of cases have come to court. Eric Howe, Data Protection Registrar, has been in charge of enforcing the act since the beginning, and has strong views on the holding of computerised data on individuals.

With more and more companies selling computer-based data, and the flood of junk mail getting ever deeper, *Express* talked to the Data Protection Registrar about the future of computerised databases and how thay will effect our lives.

Many people are confused about what the Data Protection Act is. What is its function?
First of all it gives us the right to find what information is held about us by computer users, and to have that information corrected and erased where appropriate.

If we've been damaged, for example, by inaccurate information, or if the data has been let out in some unauthorised manner, then we can claim compensation from the courts.

All computer users are involved apart from broad exceptions such as, at one end, information held for the purposes of national security, or, at the other end, information held for your own personal or domestic pleasure. But apart from these and a few other exceptions, if users hold information or personal data then they have to do two things.

First of all they have to register that with me – what sort of information they have, who it's about, where they get it from, who they are going to give it to, whether they are transferring it overseas, what they are using it for – and I publish a register containing that information.

Secondly they have to follow certain good practices which are laid down in what are called the Data Protection Principles. These refer to obtaining and processing information fairly and lawfully, and making sure it is accurate, up-to-date and adequate for its purpose.

To administer the act the registrar's office has been set up. The registrar is independent and is appointed by the Queen through letters patent. He reports directly to Parliament and he's not responsible to any Government minister. He has a a number of roles – first of all to promote the use of the good practices, secondly to give information and advice on the Act, and thirdly to consider complaints from individuals, to investigate and resolve the complaints and to inform individuals as to whether there has been a breach of the Act under these principles.

He also has a duty to encourage the development of the codes of practice among trade associations and others, and he is the enforcement authority of the Act.

So my office carries out prosecutions if someone has breached the provisions, for example, of registration, and it can issue enforcement notices if there has been a breach of the principles.

The registrar is not the final decider in these matters. The courts will, of course, decide on prosecutions.

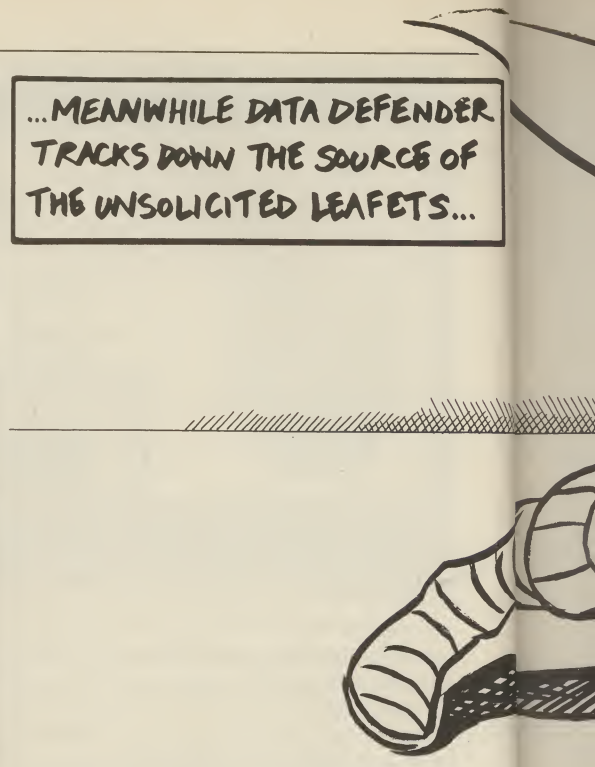
If a computer user is found guilty, what is the nature of the punishment?
In the magistrates courts there's a fine of £2,000 as a general rule, and in the higher courts there is an unlimited fine. There's no imprisonment, it's generally a fine that deals with these things.

So apart from the exemptions you've mentioned, all information kept about us has to be registered with you?
That's broadly it, but there are some other exemptions. For information dealing solely with the calculating of accounts of payroll for example. That is a very narrow exception and really applies only to small firms. Also, un-incorporated members of clubs such as tennis clubs where they are holding information only on their members, providing their members have been told and don't object.

There are some exceptions from the 'right to know' or what we call 'subject access right', but they have to be taken on a case-by-case basis. So, for example, the police could refuse to give you information. They should give you most of the information, but to give some information could prejudice the prevention or detection of crime which would obviously be a mistake. That's appealable to the registrar or courts.

WHO'S HOWE?

After graduating in economics in 1954, Eric Howe worked in the coal industry researching pit conditions. He took a similar role in the textile industry until, in 1961, he turned to computing, first as a programmer and systems analyst and then as a senior sales manager for English Electric Computers. In 1966 he joined the National Computer Centre rising to take a seat on the board. He was appointed data registrar in 1984, three years before the Act came into force in 1987.



Likewise on health, if you apply for information held on computer they must give it to you, but they can hold it back if it would damage your health. For example someone suffering from mental stress – to tell them they had an illness would have a negative effect. Again, that's appealable on a case-by-case basis.

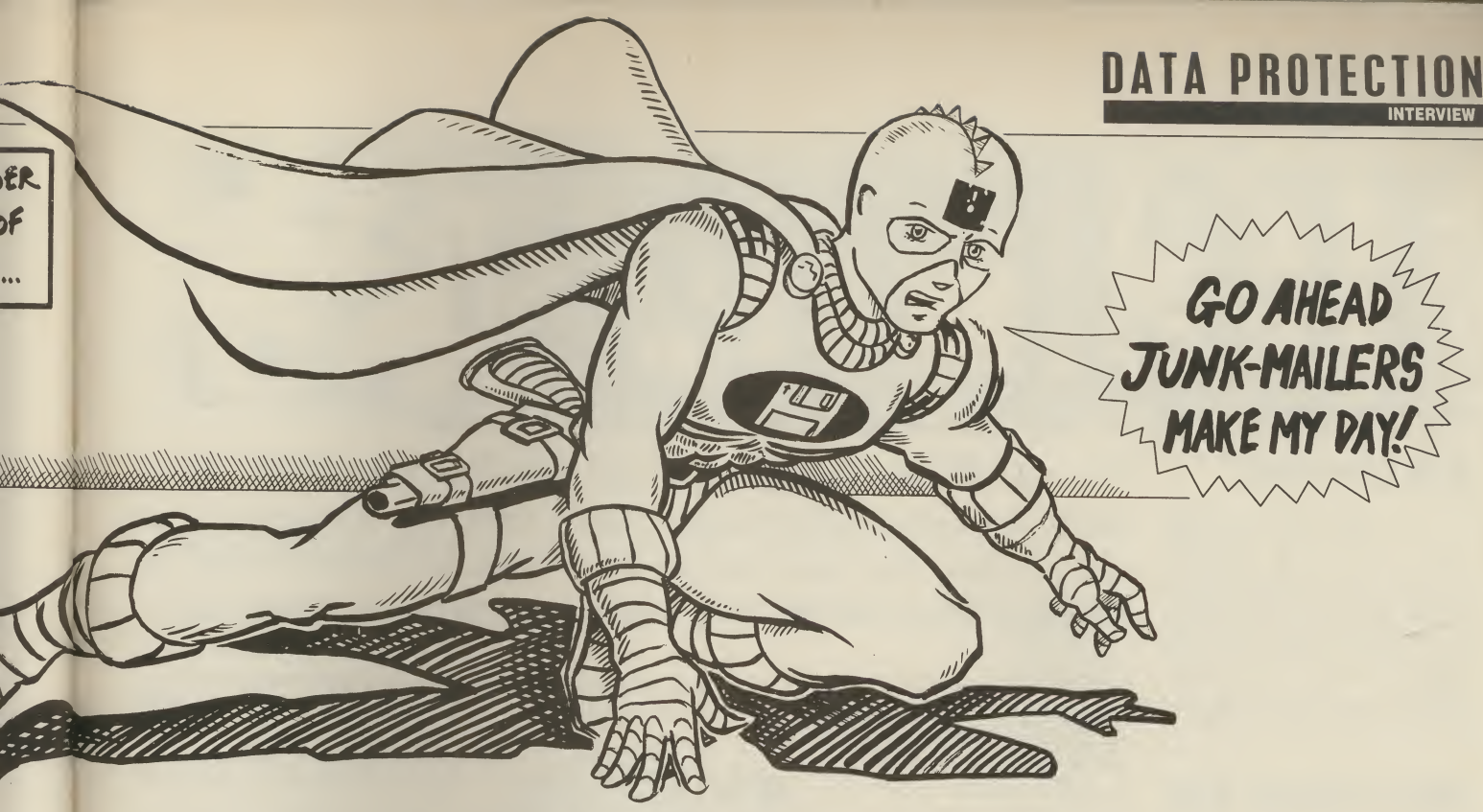
How can you go about finding out what personal information is held on computers?
The only real way to go about it is to go to the people you know you've had dealings with. Then exercise your 'subject access right' and ask them for copies of the information held about you. They'll first ask for proof that you are who you say you are, because they don't want to give information to the wrong people. They will then look for the information and they may charge you a fee of up to £10.

But one reference on a computer can quickly be multiplied into hundreds...
That is difficult for individuals, and it is very difficult to see quite how they could cope with it. If your information is passed on to somebody else there is nothing currently in the Act that causes the user to tell you that had happened. You could look at the register and there would be a list of disclosures, so that would give you a clue. But the register cannot be that detailed. It's not too easy in practice to trace where information has gone to.

We get complaints from individuals who receive unsolicited direct marketing and they can't understand how people have got hold of their names. Usually we can find whose mailing list they have used and we can get back to the original source. But it isn't always easy to do that.

When will there be an improvement in the Act?
The Act is under review at the moment. I did a review of it in 1988 which I reported to Parliament in 1989. The view I took was that the principles were really the important things rather than registration. If we can get people working to good practices that's of the best benefit to individuals. I looked for a lightening of the registration but something of a tightening up on the principles as a balancing act. Less bureaucracy for the users and a bit more protection for individuals.

It seems to be a struggle. Are you winning?
We are beginning to make progress. There's no doubt



about that. If you look at the direct marketing area, which is one place where we've had complaints, there are improvements. We are beginning to see now on order forms and questionnaires a statement as to who actually it is who is sending out the form, and often there is an option for people who don't want their information passed on for other purposes.

There's a new product been launched called the National Consumer Database. That claims to hold details on 43 million people with up to 300 entries on each person. How can this be done without violating the law?

I doubt if it's quite as full as that, but the are are a number of what I would call 'lifestyle databases' coming into existence. Things like the National Shoppers' Survey and a range of others for which information is now being collected.

What we've done with them is try to ensure there's an entry on the form where people are aware of what the information is being used for. There is often an option on the end not to have the information used for other purposes.

But it is a fact of life that the marketing industry is developing in those directions. As long as people can opt out of them then that's a help. It is that part of the procedure that we have really looked at carefully.

But where can they possibly be obtain all these facts?

They can get a fundamental start to the database by buying the electoral registers, then use that as a basis of a mailing list to send out questionnaires and then accumulate information from those. Those registers are in practice outside the Act because they are published on statute. But I have from time to time made comments both publicly and to ministers about the use of public registers.

When the community charge register was coming out, which was to be supplied for other purposes, I spoke to the ministers involved. I put a paper to them that argued that this wasn't really appropriate because in effect it caused people by statute to supply their name to anyone who cared to buy the registers.

They accepted those arguments and amended the legislation so the community charge register is not now, by statute, allowed to be sold. But it still happens with the electoral register and the share registers.

Soon CD-ROM databases containing information on everyone will be available commercially and cheaply. Does this worry you?

The building up of very large scale databases on the mass of the population with more and more information on them is proving a worry to the public. We've done research over the last few years on what the public's concern is and it has become clear that they are worried about privacy of information.

They are worried by the fact that more and more extensive databases are being collected on them and they are showing some concern over the ability of computer users to use those databases properly. The Act will help to alleviate that but it will be some time yet before we see what the full effect is.

In the meantime do we just have to suffer?

I'm not sure it's suffering. The Act hasn't set out to prevent computers being used for legitimate purposes. It has set out to do try and ensure that if they are used then the are used with certain safeguards in the sense of good practices.

It doesn't prevent the benefits of computing being realised for everybody, but it does start to regulate the computing industry.

We hear of the company Hoskyns which is selling information about students to local councils for the purposes of tax collection. How does this fit in?

That's a a wider problem than just the Hoskyns case. It has been debated widely in Parliament as to how community charge officers can go about collecting information. The universities are in a position where they have to supply details of students so they can be added to the community charge registers.

The key problem that we saw was that students will live in more than one community charge registration office. We are looking into that problem. The solution we offered was that one of the community charge offices should act as a central clearing house so that information can be sorted out properly.

It may be that Hoskyns are acting as an agent for universities in that way.

Can Hoskyns sell the information to other parties?

I wouldn't have thought so, but I don't know the way Hoskyns are operating and I need to look into it to find out. I don't know the arrangements.

People are becoming concerned about the police computer. A lot of mistakes which cause individuals a great deal of trouble have arisen recently. What can be done about that?

The accuracy of information is one of the key aspects that the Act addresses and there has been a committee in Parliament for the past few weeks on the accuracy of records on the criminal records system. Not all of those are held on computer. A lot of the older ones are held on microfiche but increasingly they are coming on to computer.

The Home Affairs committee were concerned about the up-to-dateness and the accuracy of them and the committee suggested that criminal records should be be brought together in a different way and handled by an independent agency. That seems to me a good approach.

Should there be a minimum security requirement for computer users to take against the threat to information posed by hackers?

Security measures will depend on the sensitivity of the information. One thing I am concerned about in the hacking debate is that users shouldn't depend on the ring fence of the law when making hacking an offence. It shouldn't prevent them carrying out proper security measures for their systems themselves. That would be quite wrong.

The amount you spend on security is as long as piece of string, but there are sensible precautions which users can take.

How many prosecutions have you taken out since the Act came into force?

We have started 30 prosecutions, mainly concerned with aspects of registration. There is one prosecution in for breach of an enforcement notice. But with enforcement notices we resolve most complaints in discussion with computer users. This year we will receive about 2,500 complaints from individuals. In three years that's risen from 800.

Until recently we had only issued four, then we issued 20-odd to local authorities in respect of the community charge.

Of the original four only one has appealed, and that is held pending a prosecution case involving the same company. Once that is heard then the tribunal will be able to hear its first enforcement action. ■

TECH TIPS

Does your PC keep packing up? Is your Amiga less than friendly? Would your ST try the patience of a saint? Write to Uncle Tech Tip and he'll soon see you right. Send your sorry stories to Uncle TT, Beauford Place, 30 Monmouth Street, Bath BA1 2AP. There's a prize for the most pitiful tale.

TIP Correct driver

With reference to Paul Gardener's problem with the Star LC-10C colour printer (*Express* 78), he may be interested to know that Power Computing advertises the same printer with a driver included in the price. Maybe if he talks to them nicely he will be able to get a copy one way or another.
R S McCrae, Greenisland, Co Antrim.

HELP! Flintstones failure

In January I purchased a copy of *Flintstones* and all I could get on the screen was the message 'Software Failure, press left mouse button to continue'. When I pressed the left mouse button however, I all got was a blank screen!

I returned the disk to Grandslam, explaining I could not get the program to work. After many weeks of waiting, I finally received a copy back (which could have been the same one), with no indication that anything was wrong with the disk in the first place. I then placed the new disk in my Amiga. Lo and behold, I still found that the game refused to work and got the same 'Software failure...' message. Please tell me where I am going to wrong, and why the hell didn't Grandslam have the courtesy to explain if and what was wrong?
A Fish, Knaresborough, North Yorkshire.

Don't be quite so hard on Grandslam, software houses get a thousand disks a day returned from people who haven't read the instructions properly, haven't chosen the correct configuration for their machine, or just expected too much from a particular program. Not that I'm suggesting you fall into any of those categories, but you appreciate the problem.

OK. So what *is* wrong? Has your Amiga been playing up with any other pieces of software lately? Have you recently upgraded the memory, added a second drive or some other hardware add-on? Third-party peripherals can play merry hell with software compatibility. If you have added one or more extra bits of kit to your system recently, try removing them one by one and testing the game as each peripheral is removed. In that way you'll soon discover if the software doesn't like your set-up.

If you haven't added any kit, then it could be that there's something wrong with your disk drive. Drive heads go out of alignment and the disk can spin slightly above or below ideal speeds (usually 300rpm). You could try one of the many speed testing programs from the public domain (check out Shopping Express for a supplier) to determine the spin characteristics of your drive.

Games software is notoriously delicat because software houses bolt on lots of extra protection code in order to prevent copying. However many of the protection mechanisms rely heavily on the foibles of the hardware which tends to change from machine to machine. Some new machine revision comes along and the software refuses to work.

HELP! Word wise?

For some years I have been using an Amstrad PCW8256 together with *LocoScript 1* and, more recently, *LocoScript 2*.

Having now bought an Atari 1040ST I am keen to transfer my writing activities to it but am having some difficulty in adjusting to Microsoft *Write*. I have spoken to Locomotive Software who tell me it will be some considerable time before they get around to converting *LocoScript* for use on the Atari as they are too busy converting it for the PC.

I would appreciate your guidance on a near equivalent to *LocoScript* which is commercially available, can be used on the ST and includes a spelling checker.
L Ashdown, Glebe, Norfolk.

Probably the most widely used word processor around the Future offices is Arnor's *Protext*. The program provides comprehensive and efficient word processing functions such as WYSIWYG (What You See Is What You Get) to enable easy formatting of text effects, an excellent spell checker and the ability to edit two documents at once and cut and paste between them.

There's also a very good word counting function, perfect (and essential) for those who want to produce freelance articles and features for magazines. *Protext* costs up to £99.95 but is also available at a substantially reduced price from a variety of advertisers in Shopping Express. Highly recommended.

HELP! Patched up

Recently I bought a 1040STFM from Evesham Micros, upgrading from my old 520STFM.

The computer arrived with the Atari Superpack, which Evesham Micros told me was included with the machine as part of its clearance offer (presumably to make way for the new STE).

When I booted up the Explorer disk I noticed an auto folder which contained a file called *Rompatch*, which I assume is to correct a fault in the ROM. As my machine would not normally have been supplied with the Superpack containing this disk, I am wondering if my computer actually needs this *Rompatch* program.

Can you tell me if I can safely delete the auto folder with this file inside. The computer seems to work OK when I boot up with any other disk, but as I am relatively new to computing I would appreciate your help.
Alan Miles, Lambton, Durham.

The Atari STE has a booting problem in that it cannot be booted in medium resolution. This is not a problem for most software packages but occasionally, and especially in the public domain, there are programs which need to be booted in medium resolution. To overcome this, Atari included a little patch program to fix the operating system and enable medium resolution booting. If you don't have an STE however, you don't have the problem and can safely delete the patch from the auto folder.

TIP Real PD

On reading through my copy of the best computer magazine currently on the shelves, I was disappointed to discover that public domain software costs between £2 and £3, although the cost is only supposed to cover the cost of the disk and administration.

My entire collection of PD was donated by a friend who decided to sell his ST and buy an Amiga. I realise that a great proportion of ST owners will no doubt be school pupils who cannot really afford these prices so I've decided to offer what I feel to be a free service.

I have a collection of more than 100 public domain disks and all are quite original. They include demos and utilities with titles such as *Spectrum 512* scroll show, the Batman demo and *FunFace*, a very amusing face construction kit.

I will copy any of the disks in my vast collection for your readers free of charge, providing a disk is supplied. Postage and packing will be free although I would, of course, be extremely grateful if an order was accompanied with a stamp to cover return postage.

If any reader requires more information or a free catalogue of my collection they should send me a 24p stamp.

Another aspect of my collection is the wish to turn it into a library with a lot more disks on offer. This would still be free. To do this I also offer a swap option, where readers send me a list of their disks and I pick which ones I haven't got. This would mean that a straight swap would be offered, a copy of one of my disks for a copy of one of theirs.
T. Moody, Trevona, Crowlea Road, Longhoughton, Alnwick NE66 3AN.

HELP! Monitor mayhem!

I have a Honeywell terminal consisting of a monitor and keyboard. The connecting ribbon ends in a 25-way D-type connector which plugs into the monitor.

When I turn on the power, I can type text onto the screen and edit text already typed in but only in capitals and numbers. Can I use this excellent monitor with my Spectrum and if so, how do I achieve this?
James B Reid, Colwyn Bay, Clwyd

Bung it in the bin James, the monitor cannot be connected to your Spectrum (at least not without major hardware surgery). A Honeywell terminal is an intelligent device which expects a whole lot more than just display signals to be

generated before it will actually display anything. Use the terminal as a toy, doorstop or unusual pet house and continue to display your Spectrum's output through the TV.

HELP! Good DMP?

I have an Amstrad PC1512 with a mono monitor and a hard disk drive which serves me *(right? – Uncle TT)* well. Being in great need of a printer and short of the pennies to spend, I have managed to obtain via a swap an Amstrad DMP1 printer in working order. Fine, but I have problems.

1. Will the machine work with my PC1512?

2. Is it serial or parallel?

3. What type of printer is it? Epson compatible?

4. What type of printer lead do I need? If it's of any help, I'm a dab hand with a soldering iron in case of any modifications that may need to be done.

I only need the printer for straight text work and the quality of output is not much of a problem. Please try your best to help as I am a regular reader of your column.
D J Elliot, Swansea, West Glamorgan.

The Amstrad DMP1 was Sugar's first attempt at the reasonable printer market and although it is most definitely confined to home use, the little printer is of reasonable quality and is fine for draft quality printout such as that required by program listings and the like.

Yes (1), the printer will work with your Amstrad PC1512 without any problems. (2) The DMP1 is a parallel printer. (3) The printer is Epson compatible, after a fashion, in that it shares many of the same control codes – but is not completely compatible in that reverse line feeds are a no-no. (4) You will need to obtain a standard parallel Centronics-type lead, available from any one of several suppliers currently advertising in Shopping Express. You should expect to pay around £15 for the lead.

HELP! Top of the class

As a teacher I am about to make a choice as to which home or small computers to buy for my classroom and I'm afraid I'm completely lost! In the past, I've used Commodore 64 machines that have been networked together via a peripheral sharing device. This arrangement could at best be described as adequate, and I feel that it is now time to upgrade.

To that end I have recently scoured the various computer magazines in an attempt to discover the best machine for the job. Now however, I'm even more confused than before I started. Hard drives and floppies, mono and colour monitors, CGA, MDA, VGA, EGA, 5.25 and 3.5 – the list is endless. Which would be better for the classroom and which would give the children maximum exposure to a machine they'd be likely to encounter in the outside world?

The most popular computers at the moment seem to be the Atari ST, Commodore's Amiga and the various IBM PC clones. Each seems to have merit – the PC has mountains of software available, the Amiga is wonderful for graphics and music and the ST is a good all round machine, but none of them seem to have very much educational software available and what can be got seems to be of very poor quality. Perhaps I should try out the educator's old favourite, the BBC, and plump for a BBC B, Master or Archimedes?

I need a computer which provides ports for joysticks and mice, connects easily and without fuss to a printer, has a decent monitor available, cheap disks and is sturdy and reliable – little hands can easily destroy weak computers!.

Please do your best to help me Uncle Techtip.
Andrew Stevens, Adle Vale, Leics.

• IBM compatibles are the standard business computers, so using them to teach kids will prepare them for the world outside.

The Atari ST, Commodore Amiga and PC clones are particularly popular at the moment, as you say, and the 8-bit machines such as your Commodore 64s seem to be slipping a little in terms of new software releases and abilities. Choosing new equipment is always very difficult however (particularly with the appalling cuts in educational spending over the last few years).

The ST is definitely a good all-round machine, but one which is unlikely to be found in industry and commerce. Atari has an idiosyncratic approach when it comes to PR or machine support, and so the business community has largely ignored their machine.

Commodore's Amiga has some excellent and powerful features and, on paper, looks ideal as an educational computer. Colourful graphics and comprehensive sound help to keep young minds interested. Unfortunately, the Amiga is similar to the ST in that it is almost solely confined to a home-user base. There may be one or two shopkeepers and small business persons using it in a 'serious' manner, but not very many I suspect.

Which leaves the PC clone. There are lots of them, they are widely available and cheap. They have good graphics but lousy sound, built-in disk drives and monitors and a small planet's worth of software available, including a variety of educational software (although you have to dig for it). But probably the most important aspect of the PC is that it can be found everywhere in the 'serious' world. If a child develops a basic understanding of the PC and MS-DOS then it won't go far wrong.

If you decide to choose the PC, then expect to pay around £400 for a reasonable model with a couple of floppy drives and a decent monitor up to about £600 with a hard drive. The best place to look is in Shopping Express and our sister magazine *PC Plus*..

HELP! New PET

I've always been a strong Sinclair enthusiast, right from the early days when the ZX81 was all the rage. However recently, I was given, entirely for free, an old Commodore PET machine and suddenly, my enthusiasm has reached new heights. The PET has a built-in monitor and came with a printer and a disk drive. I've managed to switch it on and type a few things into the monitor but unfortunately, because there was no manual with the machine, I don't know what else to do.

Is the PET compatible with later versions of Commodore computers such as the Vic 20 and Commodore 64 in the same way that my friend's early Atari 400 can still run almost all of the software released for the later 800XL and 130XE?

Is there any way I can get hold of some manuals for the PET? There's just so much I want to do with it but I ,can't until I know exactly how to go about it like programming and so on. Is there a user group for the PET and if so where are they and how do I join?

Please answer these questions because the machine has really won me over and I'm itching to use it.
R. Lawson, Swindon.

Well, good for you! The PET is a really nice machine, still has a lot of support today from various quarters (although none of them commercial) and has a lot of life left in it yet.

The PET is not compatible with later Commodore machines. It constituted CBM's stab at the business micro market and as such achieved a moderate amount of success. Manuals? You might try a visit to your local library. Due to enormous underfunding, the computer section of most local libraries is stuffed to the gills with books detailing the Spectravideo, TI99/4A and Commodore PET.

The Techtippers are a kindly lot and as soon as they read about your needs, manuals will probably start to pour onto my desk (rewarded with computerish trinkets of course).

There is a user group. ICPUG (Independent Commodore Products User Group) resides at PO BOX 1309, London N3 2UT. Tel: 081-346 0050. Write to Jack Cohen care of the above address for complete membership details and enjoy your new PET.■

EXPRESS MAIL

Britain's liveliest computing forum – packed with comment, controversy and conflict. Write and tell us what you think! Reach us at: *Express Mail, 30 Monmouth St., Bath BA1 2AP*
Sorry, no personal replies, even with an sae.
This week's replies written by Keith Pomfret.

Pawn shop

Please find enclosed the latest issue of my publication *Chess Comp World*. I thought some of your readers might be interested in it, especially as there's a couple of new, good chess programs on the market – *Chessmaster 2100* and *ChessPlayer 2150*.

Keep up the good work with *Express* and maybe one day we'll see a computer-chess column.

Bryan Whitby, Chess Computer World, 16 Mansfield Road, Kingsley, Warrington, Cheshire.

I'm afraid chess is wasted on me. I tried backgammon, but the pig wouldn't stand still for long enough to throw the dice so it's back to ferreting for me. Still, we mustn't deprive the rest of the world of your excellent tome so I've left the address intact for our readers to check, mate.

In a world of his own

Being a regular reader of your magazine I have followed, with interest, the developments in virtual reality, such as the glove and headset featured in your magazine.

I watched *Antennae* on BBC2 (April 25), where the principle of virtual reality was explored and several demonstrations of moving physically around a virtual world were given, including a drum demonstration, and it was this that prompted me to write to you. I am totally absorbed by the idea of being able to 'live' inside the virtual reality of a computer, and my personal belief is that as developments in optical and molecular computers increase and we have more power, better systems will be developed.

One point brought up in the programme was that in a virtual reality everything becomes valueless and things will be judged purely on function and beauty, which I feel is the way it should be.

Unfortunately I now have two gripes.

First, a very black mark to Datrontech Ltd. I placed an order for a 500K RAM expansion for my Amiga with them. Phoning up Datrontech in pursuit of my order over a month after it was placed, I was told that they were sorry and that I should have received a letter of apology. Utter rubbish. My friend ordered the same thing with the same company and he received the same reply – coincidence? I think not.

After nine weeks I finally lost my patience and asked Datrontech to send back or tear up my cheque; I had already lost interest on the money. So, what happens, three days later my expansion arrives. What if I had gone to my local shop and already bought one?

My other gripe is with television companies. Why oh why do we not have a programme dedicated to computers and suchlike that could be broadcast weekly, or even monthly? After all, how many gardening and business programmes come on every week? This is not fair one bit and television companies should realise that if they don't deliver the goods they shouldn't expect customers.

Jonathan Franklin, Ramsgate, Kent

I think that your idea of living in the virtual reality of a computer is a bit sinister, but who am I to criticise function, beauty (and no community charge). I contacted Datrontech to give it a chance to answer your charges – the person I spoke to said they would ring back, but didn't.

Incidentally, the reason that the TV companies don't do computer programs is because they tried it, got it wrong (they were crap) and no-one watched them. If you are exceedingly rich, I hear that the BSB satellite people have gone into computer TV in a big way.

Dog's body

I have never written to a magazine before but when I read the letter in *Express* 76 about the person who was complaining about the ITECs I felt I must voice my opinion.

Firstly, he said that on his works placement he did nothing but make tea all day and generally did 'dogsbody' jobs. Well, nobody said that he *had* to do them. If he was unhappy about his placement all he had to do was to request the manager of the ITEC to move him; after all, the manager is there to look after the welfare of those on the scheme.

I also feel that he should have talked to the works placement provider to try and solve the problem.

I am currently on a works placement (Dyfed & Powys Police) with the ITEC and I feel that it is providing me with valuable experience for when I venture further into my career of computing.

Philip Muldoon, Llanelli, Dyfed, South Wales

It's nice to hear that some of these ITEC courses do deliver the goods, although they obviously vary from place to place. However we take your point about talking to the manager and repeat our previous advice – if you're not getting what you expected to out of the course, make your complaint heard.

Two top tens that are about six months late...

I thought I would write in with my top 10 lists of Amstrad CPC hates and likes.

HATES

1. Spectrum portovers that look worse than on the Spectrum, due to having only four colours, and running at only three quarters of the speed. You are also charged an extra pound on full price titles.
2. Plugging your Walkman headphones into the back and hearing the distant sound of the music and sound effects.
3. Taking your CPC to a friend's house and having to walk gorilla style with the monitor as well.
4. The horrible keys on the current 464 (lucky for me I've got an old one).
5. The jerky scrolling on most games that scroll horizontally.
6. French games that look absolutely terrific and sound great but have almost no addictive qualities.
7. Software companies who occasionally don't bother to do a CPC version of a game.
8. The difference in cost between tape and disk versions of the same software (I think this may have been mentioned once or twice before).
9. The fact that Spectrum Plus 3 and CPC disk titles don't come on the same disks, because if they did it would theoretically double the amount of disk software in the high street. Too many shops only stock a handful of disk titles. This is particularly annoying because I've got a Plus 3 as well.
10. The built-in speaker and amplifier.

LIKES

1. Elite (The game and the company).
2. You actually get a full informative and comprehensive manual with it (that's one up on the ST).
3. It's reliable (that's one up on the Amiga).
4. It's hassle free and easy to program (that's what its critics call boring).
5. With its 80-column screen it turns into a great little wordprocessor and business computer.
6. The clarity and brilliant colours of the colour monitor – especially on *Sorcery* and *Barbarian II*.
7. The built-in cassette deck which hasn't failed me once.
8. *Amstrad Action* (the best computer-specific magazine bar none).
9. Forced 3D games like *Head over Heels* work better on the CPC than any other 8-bit computer.
10. Putting the sound through the hi-fi for high quality music and effects.

M Wilson, Yeovil, Somerset

I would liked to have include my own 10 likes and dislikes as well, but yours were so damn long that you haven't left me any space, bah!

The waiting game

I wrote to you a while back about problems I was having with the SAMDOS. I subsequently received the DOS (along with a 'cheat' to get round the bugs in the ROM) and sat around vegetating for about three weeks, writing a sector editor. I ➤

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E&OE - Advertised prices and specifications may change - please return the coupon for the latest information.

was just getting round to writing an ST Degas screen reader for the Coupé when – wham – the break and reset buttons fell off the back. I sent it back (business post, very good) and waited... and waited... and waited. In fact, I waited for 23 days before it returned, complete with reset and break buttons.

During this time I'd had the printer interface arrive, so I had fun using it to get printouts.

Three days later, having just got into the intricacies of the ST disk format, for no explicable reason the Coupé decided that living was no fun any more and spiritually threw itself off a tall building.

That was on March 8. Forty-one days later I have still not got it back. I know the post isn't fast, but this is ridiculous.

Oh, and now that Future have taken over *Your Sinclair* from Dennis Publishing, how about making it less of a comic and more of a computer magazine?
Geoff Winkless, Kirby Muxloe, Leicester

Your letter was much too huge so I've un-welded some of the bits that should have gone to Uncle Techtip. As for the rest, I too eagerly await a promised package from the same place, if we both shout loud enough do you think they'll hear?

Brave though we are, we can't dictate editorial policy to our sister publications so how about popping a spot of your wisdom in the post to *Your Sinclair*?

Factual errors?

My thanks to you and Mark Higham for publishing such a smashing write-up of the new, improved Micronet in *Express* 76 – the Micronet team were all delighted.

However, without wishing to appear ungrateful, I hope you won't mind if I take the opportunity to correct a couple of factual errors in the article. If you can find space to publish the corrections, so much the better.

In paragraph 7, Mark states that the "machine-specified areas never used to be regularly updated". Actually, Micronet used to update the areas on one particular day every week. However, the article is correct in saying that these parts are now updated throughout the week.

Rather more misleading and confusing is the statement referring to chatlines which appears in paragraph 10 "...new messages are added as they appear at the bottom of your screen while you're reading through the old ones." In fact, the new chatline, Multi-Chat, has a fixed carousel of frames which archive older messages. New messages can be accessed either by keying '92' or by keying '8' – which routes to a frame which is instantly updated when new messages are received. Technically, it is a combination of earlier Micronet chatlines called Daisychat and QuickChat.
Christine Ott, PR for Micronet

Ermmmm, I tried to check this out but found a goodly lump of Micronet closed for 'repairs' (*Express* 79 page 6). Please advise.

Simple is best

Why are we always bombarded by computer magazines with articles reviewing the latest technological breakthrough, costing £1,500, and then told that life as we know it cannot go on unless we buy one? Pieces of hardware, like the FM Towns, and other items such as CD-ROM, are not necessary to get the most out of your home computer.

I have a Spectrum Plus 2, the most humble of all home computers, but I have as much fun with it as the guy down the road with his Amiga A500. Why? Because it does not matter how much technical work goes into a game – if the basic design and gameplay are flawed the game will not work, no matter how advanced the computer it is running on.

With the emphasis being put on CD-ROM nowadays, you would think that it was here to stay, but has no-one ever realised that it is more likely to be a temporary measure while CD-I and interactive video are fully developed? If this is so, then those software houses which have sunk fortunes into the medium will find themselves either seriously short of cash, or calling in the bankruptcy people.

The way I see it, the problem with CD-ROM, CD-I and other formats like them is that they are all read-only. This could turn out to be a major handicap – most people want machines that use a format they can write to, not just read from and, unfortunately, CD formats cannot provide this yet.

To give just one example of how things can go wrong, does anyone remember the Sinclair QL? Just after the QL was launched Sinclair Research made an agreement with a Scottish university to supply every student with a QL by the year 1990. Now that 1990 has arrived I wonder how many QLs are on the university campus?

The moral of the story is that things do not catch on because they are the best. They catch on because they are marketed properly – anyone at Nintendo America could tell you that.
Bryan Morton, Bangor, Northern Ireland.

We cover whatever is news. To draw a comparison with the car industry, even though I can only afford a Robin, I'd be more than a tidge miffed if I bought June's *Mega Motor Monthly* only to find that it was full of Robins.

Defender of the mails

Could I just mention one of your advertisers, BCS of Brighton? I sent for a pack of disks with a disk box, but the Post Office, being what it is, not only messed up my delivery, it sent me a card telling me to pick up the parcel and then lost it altogether. When I phoned to complain I was told to contact the sender to get a search started.

Well, when I contacted BCS Ltd of Brighton, it immediately said that it would send me a replacement order at no extra cost. This arrived three days later. Firms like this you just cannot praise enough.
S V J Perchard, Whitchurch, Bristol

In an age when mail order companies regularly come under fire for getting it wrong, it's easy to forget all those helpful, honest and efficient companies. I am sure BCS will be glad to read your testimony, and I hope that it maintains the standards with which you credit it. ■

NEXT WEEK

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A look at the latest in 3D imaging technology

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The first part of our guide to communications for absolute beginners

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An Atari-based share dealing package reviewed

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